Rare Plants
and
Natural Communities

Robinson State Park, Massachusetts

Final Report

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Submitted by:

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Introduction

Robinson State Park in Agawam Massachusetts was established in 1934. It extends for about five miles along the Westfield River and has over 800 acres including a 17 acre island in the Westfield River (http://www.mass.gov/dcr/parks/central/robn.htm). The park is adjacent to an urban/developed area and has trails, roads, picnic areas, as well as natural areas. These natural areas include the floodplain areas along the Westfield River, which are likely to support communities that are uncommon in the state, other freshwater wetlands, and a variety of forested areas. Of particular interest are the ravines in the park that have populations of *Liriodendron tulipifera* (Tulip-tree). These ravines may be may be the northern - most site in Massachusetts with a significant population of this species according to Robert Leverett (http://www.nativetreesociety.org /fieldtrips/mass/robinson/robinson_state_park_update.htm). In addition to natural communities of interest to the state, three species of rare plants were documented for the park. Since eight additional species of rare plants occur within two miles, there was reasonable likelihood of adding more.

Objectives

We had three objectives for the 2007 field season at Robinson State Park (RSP): to survey the park for rare species, to locate and sample plant communities, focusing on those that are exemplary or are uncommon in the state, and to check for rare plants in areas marked for logging.

Methods

Preliminary work

Prior to starting work, we met with the park manager and with Pat Swain to obtain maps, aerial photographs, locations of known rare plant species, and general information about the park. We spent a morning with Ray Weber from the Friends of Robinson State Park who showed us around the park and gave us a list of rare species that dated from the 1980s. This list included *Boechera laeviagta* (Smooth Rock-cress), *Adlumia fungosa* (Climbing Fumitory), *Cardamine pratensis* var. *palustris* (Fen Cuckoo Flower), *Pedicularis lanceolata* (Swamp Lousewort), *Sphenopholis nitida* (Shining Wedgegrass), *Liparis lilifolia* (Lily-leaf Twayblade), *Dichanthelium scabriusculum* (Rough Panic-grass) and *Aster infirmus* (Cornel-leaf Aster). Except for *Boechera laevigata*, the species on his list have not been document with photographs or specimens. It is not clear if these species were observed or were suggested as likely to occur in the park. We also spent a morning with Robert Leverett who took us to all the Tulip-tree sites. Finally, prior to sampling communities, we spent a day and a half locating good examples of specific communities.

Rare plant Survey

Searches for rare species began 27 April 2007 and continued at approximately 2 week intervals until 1 October 2007. The dedicated searches for rare plants were primarily concentrated on the area between the edge of the bluff immediately above the Westfield River and the river's edge, and included all the floodplain areas. The entire length of the river was walked at least twice, once over several weeks in the early summer and once again in the late summer and early fall. Other parts of the park searched included stream corridors,

wetlands, areas marked for logging, and areas visited while sampling for the community part of the project. Reports have been submitted to MNHESP for all occurrences of rare or watchlist species using the Natural Heritage "Rare Plant Observation Form". We did not turn in a report for *Betula nigra*. Occurrences were documented by collecting a specimen or by taking a photograph. Specimens were deposited at the University of Massachusetts, Amherst Herbarium (MASS).

Natural Communities Survey

Based on preliminary reconnaissance, aerial photographs, and topographic maps, we attempted to identify the best occurrences of plant communities Robinson State Park that are described in Swain and Kearsley (2000). Once an area was located we used the MA Natural Heritage and Endangered Species Program Form 3 "Quantitative Community Characterization" to describe the physical characteristics of the site and the species composition of the community. We also recorded the latitude and longitude of each plot with a hand-held GPS unit. Plots in forested areas were usually 20x20 m, shrub swamps were sampled with 4x4 m plots, and a few area dense forest were sampled with 10x10 m plots. Canopy heights and cover class were estimated. We also measured the dbh of all trees (dbh > 10 cm) in each plot. The soil type in each plot was determined from the soils map of the park (DEM 1990). We noted any disturbance and kept track of invasive species in the plot and in the immediate area of the plot. Because we were interested in the best examples of a natural community type, we avoided heavily invaded areas as much as possible.

Work was done between 6 June 2007 and 16 July 2007. The locations of our sample plots are in Figures 1 and 2 and the Quantitative Community Characterization forms are in Appendix 2. We also sampled an Oak-Hickory Forest (plot 17, Fig. 1), but it was later determined to be outside the park. However, the community form for this plot is included in Appendix 2. Most of the vegetation sampling was done by three graduate students from the University of Massachusetts, Lena Fletcher, Kristina Ferrare, and Sydne Record.

Survey of areas marked for logging.

We walked through all the areas that were marked for logging, including almost all the pine plantation areas, searching for rare plants. To do this we systematically walked a compass direction from one edge of the marked area to the other with surveyors spaced about 8-10 feet apart. Any unusual plant was checked by either Karen Searcy or Sydne Record who were the most familiar with the local flora.

Species names

A list of species we encountered at Robinson State Park is included as Appendix 1. It is not intended to be a complete list. The scientific and common names used in this report follow Sorrie and Somers (1999). Both *Ulmus americana* (American Elm) and *U. rubra* (Slippery Elm) occur in the park, and the identifications of these two species, but not the genus, may not be accurate.

Results

Rare Plants

We were able to relocate all the documented rare species for RSP and added one threatened, one endangered (but possibly introduced) species, and 6 Watch List species (Table 1). Three of the eight added

were known to occur within 2 miles of RSP, and two *Thuja occidentalis* (Arborvitae) and *Betula nigra* (River Birch) are probably introduced in Hampden Co. as is *Lobelia siphilitica* (Great Blue Lobelia), a previously documented rare species. After a summer exploring the park, I doubt if *Cardamine pratensis* var. *palustris*, *Liparis lilifolia* or *Adlumia fungosa* that were on Ray Weber's list are likely to occur in RSP. We looked in suitable habitat for the others on this list with no luck. We found a small population of *C. pratensis* (Cuckoo-flower) but not *C. pratensis* var. *palustris* (Fen Cuckoo-flower) in a wet area near the river. Information on individual species is presented below.

Table 1. Rare and Watch List species of Robinson State Park.

Species	Status	# of populations
Boechera laevigata	T	4
Claytonia virginica	E	1
[1]*Lobelia syphilitica*	E	1
**Ranunculus pensylvanicus*	T	1
[1]*Thuja occidentalis*	E	1
[1]*Betula nigra*	WL	1
**Dryopteris goldiana*	WL	1
**Isotria verticillata*	WL	1
**Menispermum canadense*	WL	1
**Rhododendron periclymenoides*	WL	3
**Sanicula trifoliata*	WL	1

[1]Possibly introduced in Hampden County
* Added as part of 2007 survey

Boechera laevigata (Smooth Rock-cress)(T) was previously documented from RSP and we added 3 additional sites, including one on the island below the dam. In RSP, *B. laevigata* typically occurs along the slightly eroding top edge and a little way down the bluff (10-20 feet high) just above the river. One population occurred in disturbed soil on the island and a number of individuals, which were part of a larger population, were found along a drainage ditch on the edge of a steep bank above the river. All sites were forested with filtered sun, and had relatively little herbaceous vegetation or soil litter. The populations all seemed healthy since we saw both reproductive individuals and individuals in rosettes. This species is secure in the park. The only major threat is probably invasive species. Invasive species occurring near the populations included *Berberis thunbergii* (Japanese Barberry), *Alliaria petiolata* (Garlic Mustard) and *Celastrus orbiculata* (Oriental Bittersweet) Careful removal would be in order.

Claytonia virginica (Narrow-leaved Spring Beauty)(E) was found at the previously documented site. A half-day of searching the immediate area did not turn up any additional populations. According to Ray Weber, *C. virginica* occurs in two other localities in the park. I searched them both, but did not see any plants. The particular location of *C. virginica* does not seem secure, but the population has persisted since at least 2001

[1922 in the NHESP database, ed.]. However, *C. virginica* is in decline in the park. The current population is not threatened by invasive species. My suggestion would be to continue to watch the known population. I think it would be worth looking in the other possible localities in late April or very early May in 2008.

Lobelia siphilitica (Great Blue Lobelia)(E) was found with the help of Ray Weber at the previously documented site. The population consisted of two flowering individuals and a rosette. We also conducted searches along several stretches of the river with similar habitat, but with no luck. The site is wet from seepage from the steep bluff immediately behind the shallow terrace on which it is growing. The area probably floods every several years because it is only a few feet above the river.

L. siphilitica is listed in Sorrie and Somers (1999) as being introduced into Hampden County. Certainly the site at which it occurs lacks any of the associated species listed in the state fact sheet for the species. On 13 September, 2007, the plants were almost overgrown by the surrounding thicket of vegetation. Invasives, including the potentially invasive *Microstegium viminium* (Japanese stilt-grass), were abundant in the area. My management recommendation for this species would be to remove the *M. vimineum* which is threatening to overgrow the site. Other possible threats include an informal trail used by people and animals that is only inches away from the population.

Ranunculus pensylvanicus (Bristly Buttercup)(T) is a new occurrence for the park although it is known to occur within 2 miles of the park. The population which consisted of a single large individual was located within inches of the edge of the Westfield River. I suspect that this is a species that occurs sporadically along the river and re-establishes itself if flooding destroys a particular site. I have no management recommendations.

Thuja occidentalis *(*Arborvitae)(E) is a new occurrence for RSP and is listed in Sorrie and Summers (1999) as introduced in Hampden County. The documented population occurs in a shrub swamp and consists of a tipped over, but still living tree, and an additional tree that is about 20 -25 feet tall with cones. It appears to be spontaneous, but the likely seed source is garden plants from the surrounding neighborhoods. In its native habitat, it is associated with calcareous areas. The wetland in which it occurs does not support plants typical of calcareous areas but may be nutrient rich. A few other isolated individuals of *T. occidentalis* were also observed in the same large wetland area. However, these were stunted sub-canopy individuals that were unlikely to persist under present conditions. For the population in the shrub swamp, I think no management is necessary.

Betula nigra (River Birch)(WL) is a Watch List species that is listed in Sorrie and Somers (1999) as being introduced into Hampden County. The population consisted of two sub-canopy trees growing in a wet, forested area. The area was disturbed by a telephone line and was within 15 feet of two roads. At this time I have not turned in a rare species report for this species. I doubt that these trees were planted, but they are not growing in their typical habitat and will likely not persist. [*ed. Given that River Birch is used in landscaping,*

it is not unlikely that these trees are the offspring of trees planted in the neighborhood, as discussed for the Arborvitae above.]

Dryopteris goldiana (Goldie's Fern)(WL). We found a single plant of this Watch List species growing at the edge of a wetland area in large ravine with Tulip-trees. The ravine gets runoff from an adjacent housing development, so the site is likely to be nutrient rich. The wetlands in the bottom of the ravine are extensive and we did not search the area with this species in mind. It is likely that additional individuals would be found further down stream. We did not observe any particular threats to this species although there were some invasive species in the general area. My recommendation for this species would be to check for additional individuals so that the extent of the population could be accessed.

Isotria verticillata (Large Whorled Pogonia)(WL). We added this Watch List species to those documented from RSP while checking areas marked for logging. The population is growing in an area of Mixed Oak Forest with shrub layer that includes *Hamamelis virginiana* (Witch-hazel) and *Gaylussacia baccata* (Huckleberry). The population is large and secure since it is well off any trail. There were no invasive plants in the immediate area. In June we did not see any evidence of reproduction in this population. It may be that a little careful pruning would increase the light levels and would become reproductive.

Menispermum canadense (Moonseed)(WL). We located a single population of this species at RSP, but it is known to occur within two miles the park. The population was in an area that flooded every several years as suggested by the piles of loose, woody debris. The area is shaded by a tree canopy and in addition to *M. canadense* the area supports typical floodplain species such as *Matteuccia struthiopteris* (Ostrich Fern) and *Laportea canadensis* (Wood-nettle). My recommendation would be to remove the invasives from the site, particularly *Celastrus orbiculata* which could out-compete the *Menispermum*, at least if the area becomes more open.

Sanicula trifoliata (Trefoil Sanicle)(WL). This Watch List species was found on the narrow terrace between the river and the adjacent steep bluff. Vegetation was dense and included invasive species such as *Berberis thunbergii*. It appears to be a rich site that receives seepage from the bluff. The area supports a dense thicket of tall herbaceous plants, including *Actaea rubra* (Red Baneberry), *Collinsonia canadensis* (Northern Horse-balm) and *Solidago flexicaulis* (Zigzag Goldenrod). This area is disturbed by occasional flooding and beaver activity. The latter has killed a number of trees in the vicinity of the population. I do not think this population needs active management.

Rhodendron periclymenoides (Pinxter-flower)(WL). Three populations of this Watch List species were found along power lines in RSP, and other populations are known to occur within two miles of the park. We did not search all the power lines, but we would have seen it in the drier woods at the west end of the park and did not. The current system of cutting or spraying along the power lines appears to be maintaining the population.

Plant Communities in Robinson State Park

We sampled 13 plant communities in the park (Table 2). A number of the communities such as the Mixed Oak Community and Red Maple Swamp Communities are widespread in the state, and are also an important component of the vegetation at RSP. However, just over half of the communities we sampled are listed as either S3 or S2, which are more restricted in area or numbers of examples in the state.

Table 2. Plant Communities Sampled at Robinson State Park. The number in parenthesis is the number of plots sampled in the community.

Community	Rank*	# of plots
Forested Terrestrial Communities		
Mixed Oak Forest	S5	1
Red Oak-Sugar Maple Transition Forest	S4	1
Oak - Tulip Tree Forest		5
Rich, Mesic Forest	S3	4
Forested Palustrine Communities		
Red Maple Swamp	S5	6
Major River Floodplain Forest	S2	2
Riverine Island Floodplain Forest	S2	1
High-terrace Floodplain Forest	S2	1
"Cobble-bar Forest"	S2	1
Non Forested Communities		
Shrub Swamp	S5	4
Vernal Pool/Shrub swamp	S3	2
Low-energy River Bank	S4	1
Riverine Pointbar and Beach	S3	species list only

*Ranks are defined in more detail in the Appendix. Briefly,
Natural Communities are not regulated. S (state abundance) ranks are on a 1 to 5 scale, with S1 being considered vulnerable, generally having 1 to 5 good occurrences state wide, and S5 being demonstrably secure. Community types ranked S1, S2, and S3 are priority for conservation protection.

Plant Communities

Mixed Oak Forest. plot 28 (Figs. 1 & 2)

This is a community with more southern affinities and is found primarily east of the park headquarters where it occurs in the flat terrace and delta deposits. It is also found along the upper parts of north and northwest facing slopes above the Westfield River. This community did not extend into the steep-sided ravines at this end of the park. Conifers that are present are primarily the result of plantations. Soil is generally sandy loam and is dry. Most un-vegetated soil surface was covered with leaf litter. The plot we sampled is very similar to the community description in Swain and Kearsley (2000). Dominants in the canopy included *Quercus velutina* (Black Oak), *Q. coccinea* (Scarlet Oak), and *A. rubrum* (Red Maple) (Table 3). The large Chestnut snag, and Chestnut stump sprouts suggested that this species was a component of this community in the past. The shrub layer was dominated by heaths, and the herbaceous layer was very sparse. The community is relatively homogeneous at RSP, although other areas in the park had more Red

Oak. The major variants we saw included some combination of *Kalmia latifolia* (Mountain Laurel), *Hamamelis virginiana* (Witch Hazel) or *Viburnum acerifolium* (Maple-leaved Viburnum) in the shrub layer.

What was notable about this community was the lack of invasive plants. This is in marked contrast to most of the other plant communities at RSP. There does not seem to be any immediate threat to this community. The canopy dominants were present in the shrub layer suggesting a stable community. In the areas immediately adjacent to houses, people tend to use the park as an area to dump garden trash. We observed a few introduced plants spreading from this source. An education program, perhaps sponsored by the Friends of Robinson State Park, might be in order so this type of dumping activity could be discouraged.

Table 3. Species cover by layer in the Mixed Oak Forest. The numbers in parentheses are the cover class for the entire layer.[Layers and cover classes are defined in the appendix.]

	Layer and cover class			
Species	t1	t2 (4)	t3 (2)	s1 (3)	s2 (3)
Quercus velutina		3		1	+
Q. rubra			1	+	+
Q. coccinea		2			
Q. alba				1	
Acer rubrum		2	1	+	+
Pinus strobus			+		+
Betula lenta			2		
Castanea dentata				2	+
Sassafras albidum				+	2
Amelanchier sp.				+	
Vaccinium pallidum					3
Gaylussacia baccata					2
Viburnum acerifolium					1
Prunus serotina					+
Canopy heights	t2 70 – 90 ft.	t3 20 – 50 ft.	s1 5 – 20 ft.	s2 1 – 5 ft.	

Herbaceous layer	
Species	cover class
Lycopodium obscurum	+
Chimaphila maculata	+
Carex sp.	+

Red Oak - Sugar Maple Transition Forest. plot 18 (Figs. 1 & 2)

This is the most widespread community with northern affinities in the state (Swain and Kearsley 2000). In RSP we observed this community or approaches to Hemlock Northern Hardwood Community along Miller Brook, in a small patch along White Brook, near the waterfall on May Hollow Brook, and toward the base of some of the steep slopes of deltaic deposits at the west end of the park. This community is located in areas of alluvial soil and along moist lower margins of deltaic deposits. The soil was loam or silty loam. The areas supporting this community were moist. Since they occurred along streams which carry a high nutrient load (DEM 1990), areas with this community are probably more nutrient rich than would otherwise be expected for the area. The site sampled was picked to avoid a dense understory of *Berberis thunbergii*, but had more hemlock than other areas of this forest type. The soil surface was covered with about an inch of

litter, and the slope was moderate. In our sample, the dominant canopy trees were *Acer saccharum* (Sugar maple), *A. rubrum* (Red Maple) and *Tsuga canadensis* (Canadian Hemlock) (Table 4). *Fagus grandifolia* (Beech) was present in the understory, and there were some large Beech and *Betula alleghaniensis* (Yellow Birch) just outside the plot. The plot included some large snags. The herbaceous understory was sparse and included *Polystichum acrostichoides* (Christmas Fern), *Maianthemun canadense* (Canada Mayflower), *M. racemosum* (False Solomon's Seal), and *Trillium erectum* (Purple Trillium). The only invasive species on this plot was *Celastrus orbiculata*. However, *Berberis thunburgii* (Japanese Barberry) was very abundant along the Miller Brook, which was only a short distance away.

The major threat to this community is probably invasive plants, particularly *Berberis thunbergii*. At this point, it might be possible to remove the Japanese Barberry, but it should probably be done in late summer so as not to disturb the early spring flora that was present along the stream corridors. Improvement of the water quality, which might reduce the nutrient load, would likely help reduce the pressure from invasive plants that like to grow in moist nutrient rich areas.

Table 4. Species cover by layer for the Red Oak - Sugar Maple Transition Forest. The numbers in parentheses are the cover class for the entire layer. Layers and cover classes are defined in the appendix.

	Layer and cover class				
Species	t1 (4)	t2 (3)	t3 (2)	s1 (2)	s2 (1)
Acer rubrum	3	1			
Acer saccharum	3	1			
Tsuga canadensis	2	2	2	+	
Fagus grandifolia	1		+	2	2
Fraxinus americana	1				
Quercus rubra	1				
Cornus alternifolia					+
Viburnum acerifolium					+

Canopy Heights: t1 80 - 100 ft. t2 40-80 ft. t3 20 - 40 ft. s1 5-20 ft. s2 1-5 ft.

Herbaceous plants (1)

Species	cover class
Anemone quinquefolia	+
Arisaema triphyllum	+
Celastrus orbiculata	+
Dennstaedtia punctilobula	+
Maianthemum canadense	+
Maianthemum racemosum	+
Mitchella repens	+
Polygonatum pubescens	+
Polystichum acrostichoides	+
Trillium erectum	+
Uvularia perfoliata	+
Vaccinium pallidum	+

Oak - Tulip-tree Forest plots 1-5 (Figs. 1 & 2)

Massachusetts is near the northern limit of *Liriodendron tulipifera* (Tulip-tree) so communities with this species, particularly as a major component, are uncommon in the state. Although Tulip-tree grows in a variety of habitats, its best growth is reported be in sheltered coves, and on gentle concave slopes

(http://na.fed.us/pubs/silvics_manual/volume_2/liriodendron/tulipifera.htm). I did not find an equivalent for this community in Swain and Kearsley (2000), but this community fits the description of the Oak Tulip-tree Community in New York (http://www.acris.nynhp.org/guide.php?id=9985) except the RSP lack *Vaccinium.*

At RSP the communities with Tulip-tree are located in three ravines east of the park headquarters, although a few Tulip-trees were found scattered throughout the park, including along the river. The ravines were in lake-bottom deposits or in unassigned glacial till. The lower slopes and bases of the ravines were wet and had streams and seeps. Soils were fine sandy loam and loamy sand. Within these ravines Tulip-tree dominated areas were found from about mid-slope to the bottoms of the ravines. The sites were moist, but mostly well-drained. However, in one plot large Tulip-trees grew on hummocks at the ravine bottom. Leaf litter was the dominant un-vegetated layer; its depth ranged from ½ inch to about 5 inches, but was generally about an inch deep. The lack of ericaceous understory and the presence of sugar maple suggest areas supporting Tulip-trees were relatively nutrient rich.

The dominant trees in the canopy were Tulip-tree and Red Oak, although the canopy was relatively diverse and included *Acer rubrum* (Red Maple), *Acer saccharum* (Sugar Maple), *Betula lenta* (Black Birch), *Betula alleghaniensis* (Yellow Birch), and *Fraxinus americana* (White Ash) (Table 5). The shrub with the highest cover was *Hamamelis virginian*a, which was present in all plots. The plots that included ravine bottoms had *Lindera benzoin*. The herbaceous layer was rich with a total of 42 species recorded in 5 plots. The average cover for the herbaceous layer was 3 (25-50%). The most common herbaceous species were *Arisaema triphyllum* (Small Jack-in-the-pulpit), *Maianthemum racemosum* (False Solomon's Seal), *Lycopodium obscurum* (Ground Pine), *Symplocarpus foetidus* (Skunk-cabbage), and *Thelypteris noveboracensis* (New York Fern).

Our plots were representative of the types of areas in which we saw Tulip-trees, however, within the ravines, Tulip-trees were not a continuous component of the forest. Where they did occur, they were frequently tall, up to 120 feet, and could be large with a dbh of up to 95.8 cm. The Tulip-trees ranged in size from 16.7 to 95.8 cm dbh. Saplings, with a dbh of less than 10 cm were present in two plots, and we saw a number of small Tulip-trees outside our plots as well.

The plots we sampled showed very little signs of disturbance, although some areas which included smaller Tulip-trees were marked for logging. Plot 5 was near an area used as a garden dump and trash was thrown in the ravine. Invasive plants were not abundant but we did see *Celastrus orbiculata*, *Euonymus alata*, and *Acer platanoides* (Norway Maple).

Management for this community should focus on removal of invasives and on maintaining areas with Tulip-trees in the park. The first is probably practical since large areas of the ravines with Tulip-trees are not heavily invaded. The second may be more difficult. Tulip tree is reported to be shade intolerant, but once in the canopy does well (http://na.fed.us/pubs/silvics_manual/volume_2/liriodendron/tulipifera.htm). Given the recent logging controversy at RSP, before planning any logging for the purpose of opening the canopy and regenerating Tulip-trees, it would be a good idea to determine age structure of the population. It may be that

some selective opening the canopy in areas of the ravines that are currently without Tulip-trees would be a way to assure the continued occurrence of Tulip-trees without damaging current stands.

Table 5. Average cover class (c) and frequency (f) for species in the Oak- Tulip Tree Forest Community Numbers in parentheses are the average cover of the canopy layers. Layers are defined below; cover classes are defined in the appendix.

Layer	Layer and cover class									
	t1		t2		t3		s1		s2	
	(2.75)		(3.2)		(2)		(3)		(1.4)	
species	c	f	c	f	c	f	c	f	c	f
Liriodendron tulipifera	2.5	0.8	2.2	1.0					+	0.4
Quercus rubra	2.0	0.4	1.2	0.6					+	0.4
A. saccharum			0.4	0.2	0.6	0.2	1.0	0.6	+	0.6
Acer rubrum			0.8	0.4	0.4	0.4	0.6	0.4		
Betula lenta			0.4	0.2	1.2	0.8	0.6	0.6		
B. alleghaniensis			0.3	0.2	0.4	0.4				
Q. alba			0.8	0.2						
B. papyrifera			0.2	0.2						
Fraxinus americana			0.3	0.2						
Nyssa sylvatica					0.2	0.2				
Hamamelis virginiana							2.4	1.0	+	0.6
Carpinus caroliniana							0.4	0.4		
Viburnum acerifolium									+	0.8
Lindera benzoin									+	0.4
Kalmia latifolia									+	0.4

Canopy heights: t1 85 - 120 ft. t2 60 - 80 ft. t3 25 – 60 ft.
s1 5 - 20 ft. s2 1 - 5 ft.

Herbaceous plants (3)		
Present in more than one plot	Freq.	Present in a single plot
Arisaema triphyllum	1.0	*Actaea pachypoda*
Maianthemum racemosum	1.0	*Aralia racemosa*
Lycopodium obscurum	0.8	*Carex sp.*
Symplocarpus foetidus	0.8	*Chelone glabra*
Thelypteris noveboracensis	0.8	*Chimaphila maculata*
Maianthemum canadense	0.6	*Circaea lutitiana ssp. canadensis*
Medeola virginiana	0.6	*Dryopteris goldiana*
Osmunda cinnamomea	0.6	*Dryopteris intermedia*
Polystichum acrostichoides	0.6	*Equisetum hyemale*
Anemone quinquefolia	0.4	*Gaultheria procumbens*
Aralia nudicaulis	0.4	*Glyceria melicaria*
Aster divaricatus	0.4	*Hydrocotyle americana*
Athyrium filix- femina	0.4	*Mitchella repens*
Celastrus orbiculata	0.4	*Onoclea sensibilis*
Dennstaedtia punctilobula	0.4	*Osmunda regalis*
Dentaria diphylla	0.4	*Parthenocissus quinquefolia*
Impatiens capensis	0.4	*Rhododendron sp.*
Osmunda claytoniana	0.4	*Rubus hispidus*
Poa alsodes	0.4	*Sassafras albidum*
Polygonatum pubescens	0.4	*Smilax herbacea*
Prenanthes altissima	0.4	*Solidago caesia*
Uvularia sessilifolia	0.4	*Solidago flexicaulis*
		Trientalis borealis
		Veratrum viride

Rich, Mesic Forest. Plots 11, 10, 12, 13 (Figs. 1 & 2)

This area is within the 100 year floodplain and occurs in alluvium at the base of a steep bank of lake bottom deposits and is within an obvious meander scar. It supports a rich spring flora typical of rich, mesic forests including *Dicentra cucullaria* (Dutchman's Breeches), *Dentaria diphylla* (Broad-leaved Toothwort), *D. laciniata* (Cut-leaved Toothwort), *Erythronium americanum* (Trout-Lily), *Hydrophyllum virginianum* (Virginia waterleaf), and a patch of *Allium tricoccum (Wild leek)*. The unvegetated soil surface is litter. The canopy is dominated by *Acer saccharum* (Sugar Maple), *Fraxinus americana* (White Ash), and *Betula lenta* (Black Birch) (Table 6). *Carya cordiformis* (Bitternut) is present as is *Betula alleghaniensis* (Yellow Birch). *Lindera benzoin* was present in all plots suggesting a relatively moist, and rich area. In the wetter area toward the base of the buff the herbaceous layer included *Solidago patula* (Rough-leaved Goldenrod), and lots of Impatiens, both *I. pallida* (Yellow Jewelweed) and *I. capensis* (Orange Jewelweed). Invasive plants such as *Berberis thunbergii* and *Euonymus alata* were present.

This area has a spectacular display of spring ephemerals. Removal of invasives would be practical in this area and it is small enough so the entire area could be cleared. Removal should be done in the late summer when less likely to disturb the rich spring flora.

Table 6. The average cover class (c) and frequency (f) for species found in the Rich, Mesic Forest. Numbers in parentheses are the average cover class for each layer. Cover codes are defined in the Appendix.

Layer	T1 (2.5)		t2 (3.5)		t3 (2.75)		s1 (2.75)		s2 (2)	
Species	c	f	c	f	c	f	c	f	c	f
Acer saccharum	2.3	1.0	3.25	1.0	3	3	2.3	0.75	+	0.5
Fraxinus americana	1	0.5	1	0.25	2	0.25			+	0.5
Betula lenta	2	0.25	2.3	0.75			1	0.5		
Quercus rubra			1	0.5						
Ulmus sp.			1	0.5			1	0.5		
Acer rubrum			2	0.25						
Fagus grandifolia					+	0.25				
Carya cordiformis					+	0.25				
Betula alleghaniensis					1	0.25				
Carpinus caroliniana							1.5	0.5		
Lindera benzoin							1.5	0.5	2.3	0.75
Berberis thunbergii									+	0.5
Euonymus alata									1-	0.75

Canopy Heights t1 60 - 90 ft. t2 40 - 60 ft. t3 20 -40 ft.
s1 5 – 20 ft. s2 1-5 ft.

Table 6 (continued)

Herbaceous layer (average cover 4.25)

species	frequency	species	frequency
Carex bromoides	*1.0*	*Actaea pachypoda*	0.25
Parthenocissus quinquefolia	*1.0*	*Anemone quinquefolia*	0.25
Viola sp.	*1.0*	*Carex gracillima*	*0.25*
Arisaema triphyllum	*0.75*	*Carex hirtifolia*	*0.25*
Aster divaricatus	*0.75*	*Carex laxiculmis*	*0.25*
Athyrium filix-femina	*0.75*	*Carex projecta*	*0.25*
Impatiens capensis and *pallida*	*0.75*	*C. radiata*	*0.25*
Celastrus orbiculata	*0.75*	*C. sprengelii*	*0.25*
Maianthemum racemosum	*0.75*	*Chrysosplenium americanum*	*0.25*
Onoclea sensibilis	*0.75*	*Equisetum arvense*	*0.25*
Polygonatum pubescens	*0.75*	*Festuca subverticillata*	*0.25*
Polystichum acrostichoides	*0.75*	*Mitchella repens*	*0.25*
Symplocarpus foetidus	*0.75*	*Poa alsodes*	*0.25*
Solidago flexicaulis	*0.75*	*Rosa multiflora*	*0.25*
Trillium erectum	*0.75*	*Sanguinaria canadensis*	*0.25*
Erythronium americanum	*0.5*	*Solidago patula*	*0.25*
Laportea canadensis	*0.5*	*Solidago rugosa*	*0.25*
Maianthemum canadense	*0.5*	*Thelypteris noveboracensis*	*0.25*
Maianthemum racemosum	*0.5*		
Osmunda cinnamomea	*0.5*		
Osmunda claytoniana	*0.5*		
Ranunculus recurvatus	*0.5*		

Red Maple Swamp. plots 6, 8, 21, 22, 23, and 24 (Figs. 1 & 2)

Red maple swamps are common in Massachusetts and are the most common forested wetland type at RSP outside the floodplain of the Westfield River. At RSP they are in shallow basins or at the bottom of swales in rolling terrain. Most are supported by seeps and the largest wetland area at the east end of the park (area 17, Fig. 3) was supported by both seeps and streams. The plots sampled ranged from moist to saturated, but all areas were at least periodically inundated. Un-vegetated surfaces consisted of muck or water. Litter was present in the drier plots or on hummocks. There was no evidence of disturbance in any of the areas we sampled. Invasives were common, particularly *Rosa muliflora* (Multiflora Rose), and *Euonymus alata* (Winged Euonymus).

Red maple was dominant in the canopy (Table 7). Sub-canopy trees included *Ulmus sp.* (Elm) and *Carya* sp. (Hickory). *Lindera benzoin* (Spice Bush) was the most common shrub and accounted for most of the cover in the shrub layer. *L. benzoin* is a species of calcareous or nutrient rich areas (Swain and Kearsley, 2000) and it is likely that water supporting these wetlands have a high nutrient load (DEM 1990). The other common shrubs were *Vaccinium corymbosum* (Highbush-blueberry) and *Viburnum dentatum* var. *lucidum* (Northern Arrow-wood). Herbaceous cover was usually greater than 75% because of *Symplocarpus foetidus* (Skunk-cabbage). Ferns, particularly *Osmunda cinnamomea* (Cinnamon Fern) were common. *Maianathemum canadense* (Canada Mayflower) was also common but was associated with slightly higher ground.

We have no management recommendations for this community. Removing invasive species would be difficult for most of these areas and might cause more damage than good.

Table 7. The average cover class (c) and frequency (f) for species in each canopy layer of the Red Maple Swamp Community. Numbers in parentheses are the average cover class for each layer. Cover codes are defined in the Appendix.

Species	t1 (2.6)		t2 (2.2)		t3 (2.1)		s1 (2.6)		s2 (2)	
	c	f	c	f	c	f	c	f	c	f
Acer rubrum	1.8	0.7	1.8	0.8	0.5	0.5				
Quercus bicolor	0.7	0.3								
Prunus serotina			0.2	0.3					+	0.3
Fraxinus americana					0.8	0.3			+	0.3
Ulmus sp.					0.7	0.3	0.4	0.3		
Carya sp.					0.5	0.3				
Acer saccharum					0.3	0.2			+	0.3
Pinus strobus					0.2	0.2				
Populus grandidenta					0.2	0.2				
Lindera benzoin							2.3	1.0	1.7	1.0
Vaccinium corymbosum							0.7	0.7	+	0.7
Viburnum dentatum var. *lucidum*								0.5	0.7	+ 0.8
Quercus rubra							0.3	0.3	+	0.3
Rosa multiflora									+	0.5
Euonymus alata									+	0.3
Fagus grandifolia									+	0.3
Sassafras albidum									+	0.3
Viburnum acerifolium									+	0.3
Canopy heights:	t1 60 - 75 ft.		t2 20 - 40 ft.		t2 40 – 60ft.		s1 1 - 5 ft.		s1 5 - 20 ft	

More than one plot	Herbaceous layer (4.5) frequency	single plot
Symplocarpus foetidus	1.00	*Amphicarpaea bracteata*
Maianthemum canadense	0.83	*Anemone quinquefolia*
Arisaema triphyllum	*0.66*	*Aralia nudicaulis*
Dryopteris cristata	0.66	*Aster sp.*
Impatiens capensis	0.66	*Athyrium filix-femina*
Osmunda cinnamomea	0.66	*Berberis thunbergii*
Osmunda regalis	0.50	*Cardamine pensylvanica*
Viola cucullata	0.50	*Carex crinita*
Carex stricta	0.33	*Carex stipata*
Maianthemum racemosum	0.33	*Chrysosplenium americanum*
Parthenocissus quinquefolia	0.33	*Equisetum arvense*
Ranunculus recurvatus	0.33	*Galium sp.*
Scutellaria lateriflora	0.33	*Gaultheria procumbens*
Solidago rugosa	0.33	*Glyceria melicaria*
Toxicodendron radicans	0.33	*Lycopodium obscurum*
		Lysimachia ciliata
		Maianthemum racemosum
		Mitchella repens
		Onoclea sensibilis
		Polygonatum pubescens
		Rumex obtusifolius
		Scirpus sp.
		Solidago sp.

Viola sp.

Major River Floodplain Forest. plots 15 and 16 (Figs. 1 & 2)

At least two areas of this forest type occur along the Westfield River in Robinson State Park. This community is uncommon in the state (S2), and is apparently a new community for the Westfield River. I suspect it also occurs along the north side of the river opposite the park. Both areas of this community are near a bend in the river and are depositional areas. Parts of them have channels where the river runs through in flood. Both areas have woody debris indicative of flooding, and in the very early spring it was clear that both areas had been scoured this year. The un-vegetated surface was sand. Trees tended to be along ridges parallel to the river. This community is highly disturbed area and includes invasive plants (Table 8). One plot had *Platanus occidentalis* (Sycamore) and *Tilia americana* (Basswood) as emergents, but the dominant tree was *Acer saccharinum* (Silver Maple). The shrub layer, except for shorter *A saccharinum,* were almost absent. *Acer negundo* (Boxelder) was not in the plots sampled but did occur as a minor component in this community. The herbaceous layer was patchy and included *Matteuccia struthiopteris* (Ostrich Fern) with an average cover class of 1.5 and *Laportea canadensis* (Wood-nettle) with an average cover class of 1. *Helianthus decapetalus* (Thin-leaved Sunflower) was found on ridges toward the river. Invasive species such as *Alliaria petiolata* (Garlic-mustard) and *Polygonum cuspidatum* (Japanese Knotweed) were present although the latter was not as evident in early June when the samples were done as later.

At the present time it would be possible to control some of the invasives in this community, particularly *Polygonum cuspidatum*. This species has a tendency to spread rapidly and I have seen it completely take over a floodplain area. My recommendation for the areas with this community would be to start a removal program for at least this species. A secondary goal would be to remove Garlic Mustard. However, Garlic Mustard is so widespread in the park and along the river that the chances of success are less than for *P. cuspidatum*.

Table 8. Average cover class (c) and frequency (f) for species in the Major River Floodplain community. The number in parentheses is the average cover class for the layer. Cover codes are defined in the Appendix.

Species	Layer and average cover class									
	t1 (3)		t2 (4)		t3 (3)		s1 (1)		s2 (0.5)	
	c	f	c	f	c	f	c	f	c	f
Platanus occidentalis	1	0.5								
Tilia americana	3	1.0			1	0.5				
Ulmus rubra					2-	0.5				
Acer saccharinum			4	1.0	3	1.0	+	1.0	+	0.5
Cornus amomum							+	1.0	+	0.5
Euonymus alata							+	1.0	+	0.5
Celastrus orbiculata							+	0.5	1	0.5
Acer negundo							+	0.5	+	0.5
Lindera benzoin							+	0.5		
Berberis thunbergii									+	0.5
Canopy heights	t1 max. 90 ft s1 5 - 20 ft		t2 max. 70 ft. s2 - 1-5 ft.		t3 20 - 50 ft.					

Table 8 (Continued) Major River Floodplain Forest. Herbaceous layer.

Average cover class for the herbaceous layer (2.5)			
In two plots		In only one plot	
Alliaria petiolata	1	*Ageratina altissima*	1
Arisaema triphyllum	+	*Cardamine impatiens*	+
Ciraea lutitiana ssp *canadensis*	+	*Cryptotaenia canadense*	+
Helianthus decapetalus	1-	*Echinocystis lobata*	+
Laportea canadensis	1	*Eupatorium maculatum*	1
Matteuccia struthiopteris	1.5	*Glechoma hederacea*	+
Onoclea sensibilis	+	*Impatiens capensis*	+
Parthenocissus quinquefolia	+	*Lilium canadense*	+
		Poa alsodes	+
		Polygonum cuspidatum	1
		Polygonum virginianum	+
		Toxicodendron radicans	+
		Uvularia sessilifolia	+
		Viola cucullata	+

Riverine Island Floodplain Forest. Plot 27 (Figs. 1 & 2)

This community occurs on a low island with the Westfield River on one side and an unnamed tributary stream on the other. It is an uncommon community in the state and our work last summer extends this community type to the Westfield River. At least part of the area sampled experiences regular flooding. There was no appreciable accumulation of litter, and the soil was dry and sandy. Like the previous community it is highly disturbed with many invasives, particularly *Celastrus orbiculata* (Oriental Bittersweet). In contrast to the Major River Floodplain community, the canopy of *Acer saccharinum* (Silver Maple) was much lower and was relatively open (Table 9) and the herbaceous layer, was dominated by a dense layer (cover class 4) layer of *Matteuccia struthiopteris* (Ostrich Fern).

It might be possible to control *Berberis thunbergii* at this site by pulling. However, *Celastrus orbiculata* occurred as the major understory on parts of the island so it would be difficult to remove it without damaging the integrity of the sandy island.

Table 9. Cover class for species in each layer of the Riverine Island Flood plain Forest. The number in parenthesis is the cover class for each layer.

Species	layer and cover class				
	t1	t2	t3 (3)	s1 (+)	s2 (1)
Acer saccharinum			3		
Alnus incana var. *rugosa*				+	+
Salix sp.				+	+
Rosa multiflora				+	1
Cornus amomum				+	+
Euonymus alata					+
Berberis thunbergii					+

Table 9 (continued)

	Herbaceous layer (5)		
Matteuccia struthiopteris	*4*	*Maianthemum racemosum*	+
Onoclea sensibilis	*2*	*Osmorhiza longistylus*	+
Amphicarpaea bracteata	+	*Panicum clandestinum*	+
Apios americana	+	*Phalaris arundinacea*	+
Athyrium filix-femina	+	*Poa alsodes*	+
Aster divaricatus	+	*Polygonatum pubescens*	+
Bidens sp.	+	*Polygonum virginianum*	+
Carex crinita	+	*Thalictrum pubescens*	+
C. sprengelii	+	*Uvularia sessilifolia*	+
Equisetum arvense	+	*Viola sp.*	+
Eupatorium maculatum	+		
Helianthus decapetalus	+		
Iris versicolor	+		
Lilium canadense	+		
Lycopus sp.	+		
Maianthemum canadense	+		

High Terrace Floodplain Community. plot 14 (Figs. 1 & 2)

This is another community that is uncommon in the state (S2) largely because it has been converted to agriculture (Swain and Kearsley 2000). In RSP it is found west of the swimming area between the road and the relatively low bluff above the river. The area probably does not flood and the un-vegetated surface is covered with leaf litter to the depth of a couple of inches. The soil is moist and is loamy find sand or very fine sandy loam. The emergents include *Platanus occidentalis* (Sycamore) and *Tilia americana* (Basswood) (Table 10), which can be large (87 cm dbh). These two species occur in other floodplain communities at RSP. However, most of the canopy and subcanopy are dominated trees more characteristic of uplands such as *Acer rubrum* (Red Maple), Betula lenta (Black Birch) and Oaks. *Lindera benzoin* and *Euonymus alata* are the shrubs with the highest cover. Some areas of this of community are very heavily invaded with *Euonymus alata* (Winged Euonymus) and *Rosa multiflora* (Multiflora rose). *Euonymus europea* (Spindle Tree) is not listed as an invasive species (Somers et al. 2006), but has spread through a large area of this community. The early spring flora includes patches of spring ephemerals such as of *Dicentra cucullaria* (Ducthman's Breeches) and *Erythronium americanum* (Trout-lily), which were gone before we sampled.

The areas of this community are so heavily invaded that it would probably do more damage than good to try to remove the invasives. In some places that probably support this community it is almost impossible to walk through the forest because of the *E. europea*.

Table 10. Cover for each species in each layer of the High Terrace Floodplain Forest. The number in parenthesis is the cover class for each layer. Cover codes are in the appendix.

	layers				
	t1	t2	t3	s1	s2
Species	(3)	(4)	(2)	(4)	(4)
Platanus occidentalis	2				
Tilia americana	2				
Quercus velutina		1			
Q. rubra		1			
Betula lenta		2	2	1	
Ulmus rubra		1	1	1	+
Acer rubrum		2	1	1	
Fagus grandifolia				1	
Carya cordiformis				+	
Parthenocissus quinquefolia				1	
Toxicodendron radicans				1	
Lindera benzoin				2	2
Acer saccharum				1	+
Euonymus alatus				1	2
Berberis thunbergii					1
Fraxinus americana					+
Viburnum acerifolium					+
Rosa mulitflora					+

Canopy heights: t1 70-90 ft. t2 50-70 ft. t3 20-50 ft. s2 5-20 ft. s2 1-5 ft.

Herbaceous layer (4)

Species	cover class		
Parthenocissus quinquefolia	2	*Osmunda claytoniana*	+
Toxicodendron radicans	2	*Polygonatum pubescens*	+
Arisaema triphyllum	1	*Polygonum scandens*	+
Celastrus orbiculata	1	*Rosa multiflora*	+
Onoclea sensibilis	1	*Symplocarpus foetidus*	+
Aster divaricatus	+	*Thelypteris noveboracensis*	+
Athyrium filix femina	+	*Viburnum acerifolium*	+
Impatiens capensis	+	*Viburnum dentatum*	+
Maianthemum canadense	+	*Viola sp.*	+
Maianthemum racemosum	+		

"Cobble Bar" Forest. plot 29 (Figs. 1 & 2)

This community, which resembles the Cobble Bar Forest in some respects, is found along straight stretches of the river where the bank is low. However, cobble substrates are uncommon. It is confined to the area between the river and the base of the river bluff and can be quite narrow. Un-vegetated surfaces are sand and the areas flood periodically, although perhaps not every year. Emergents include *Platanus occidentalis* (Sycamore). The canopy is dominated by *Acer saccharinum* and *Ulmus rubra* (Slippery Elm) and the sub-canopy includes *Carpinus caroliniana* (Musclewood) (Table 11). Invasive shrubs are present. The canopy is moderately dense (cover class 4). At RSP this community is distinguished by its tall herbaceous layer, which geneally includes *Eupatorium maculatum* (Spotted Joe-pye-weed), *Helianthus decapetalus* (Thin-leaved Sunflower), and *Cinna arundinacea* (Common Woodreed). *Elymus hystrix* (Bottlebrush-grass) and *Lilium canadense* are distinctive species. Along the river margins this community grades into the Low Energy Rver Bank community.

This community is common in RSP and needs more work to fully characterize it. The best examples are from the turn-around at the west end of the park as far as the western boundary and from dam to where the power line crosses the river.

Table 11. Cover for each species in each layer of the "Cobble Bar" Forest. The number in parenthesis is the cover class for each layer. Cover codes are in the appendix.

	layer				
Species	t1 (4)	t2 (4)	t3 (1)	s1 (+)	s1 (3)
Platanus occidentalis	4				
Acer saccharinum		2			
Ulmus rubra		3			
Carpinus caroliniana			1		
Salix sp			1		
Ligustrum ovalifolium				+	+
Berberis thunbergii					2
Celastrus orbiculata					2
Canopy Height: t1 50-70 ft	t2 30 – 50 ft	t3 10-30 ft		s1 = 5 – 20 ft.	s2 = 1-5 ft.
	Herbaceous species (5)				
Species	cover class				
Eupatorium maculatum	*3*	*Laportea canadensis*		+	
Helianthus decapetalus	*3*	*Lilium canadensis*		+	
Onoclea sensibilis	*1*	*Lysimachia ciliata*		+	
Cinna arundinacea	*1*	*Parthenocissus quinquefolia*		+	
Celastrus orbiculata	*1*	*Polygonatum pubescens*		+	
Alliaria petiolata	+	*Polygonum virginianum*		+	
Amphicarpaea bracteata	+	*Rosa multiflora*		+	
Arisaema triphyllum	+	*Rudbeckia laciniata*		+	
Bidens sp.	+	*Thalictrum pubescens*		+	
Elymus hystrix	+	*Toxicodendron radicans*		+	
Equisetum arvense	+	*Viola sp.*		+	
		Xanthium strumarium		+	

Shrub swamps plots 7, 9, 25, 26. (Figs. 1 & 2)

Like Red Maple Swamps, Shrub Swamps are common and secure in the state. As indicated in Swain and Kearsley (2000), the species composition of the Shrub Swamps is variable both within and between sites. One or two species of shrub tended to dominate at any one site (Table 12). The common denominator is that all shrub swamps occurred around a shallow basin that was filled with water at least part of the year, and had a high tall-shrub cover. Un-vegetated surfaces were muck, but shrubs tended to have higher ground at their base and these areas supported herbaceous vegetation. Plot 7 (Fig. 1) was a Willow-Alder shrub swamp and was relatively open supporting herbaceous layer of about 16 species. Plot 9 (Fig. 1) was part of a very extensive shrub swamp surrounding a small, permanent pond with an extensive cover of skunk cabbage. Plots and 25 and 26 (Fig. 1) were on opposite sides of an intermittently flooded shallow basin in a large wooded wetland. These last three plots were hummocky and had areas of sphagnum. *Toxicodendron vernix* (Poison Sumac) and *Lyonia ligustrina* (Maleberry) were components of the shrub swamps in plots 7 and 25. The presence of *Lindera benzoin* (Spice Bush) in three of the four shrubs swamps sampled suggests that these areas are likely to be nutrient rich.

Invasives were not a significant component of any of the shrub swamps sampled. However, we did find *Rhamnus frangula* (Glossy Buckthorn) in one. Although this particular shrub swamp (plot 7) was likely created by human disturbance, we suggest removing *R. frangula* from this area before is spreads into adjacent wetland areas. I would suggest leaving the others alone.

Table 12. Average cover class (c) and frequency (f) for species in the Shrub Swamp Community. The number in parentheses is the average cover class for the layer. Cover codes are in the appendix.

Species	Layer t1	t2	t3	s1 (4.25)	s2 (2.5)
	c f			c f	c f
Salix sp.	1 0.25			+ 0.25	
Acer rubrum				1 0.5	1 0.25
Alnus incana var. *rugosa*				1.5 0.5	+ 0.25
Aronia x prunifolia				1 0.25	+ 0.25
Betula populifolia				1 0.25	
Rhamnus frangula				1 0.25	
Fraxinus americana				1 0.25	+ 0.25
Cornus amomum				1- 0.5	1 0.25
Ilex verticillata				2 0.5	1 0.25
Vaccinium corymbosum				2.5 0.5	2 0.75
Lindera benzoin				2 0.25	2 0.50
Viburnum dentatum				3 0.25	1 0.75
Nyssa sylvatica					+ 0.25
Spiraea alba var. *latifolia*					+ 0.25
Vitis sp.					1 0.25
Canopy heights	s1 5 - 20 ft	s2 1-5			

Herbaceous plants (Frequency)		
Species in more than one plot		species in one plot
Bidens sp.	0.75	*Apios americana*
Impatiens capensis	0.75	*Arisaema triphyllum*
Galium sp.	0.75	*Athyrium filix-femina*
Maianthemum canadense	0.75	
Osmunda cinnamomea	0.75	*Carex crinita*
Scutellaria sp	0.75	*C intumescens*
Symplocarpus foetidus	0.5	*C. lurida*
Arisaema triphyllum	0.5	*C. stipata*
Boehmeria cylindrica	0.5	*C. vulpinoidea*
Cardamine pensylvanica	0.5	*Chelone glabra*
Carex stricta	0.5	*Huperzia lucidula*
Equisetum arvense	0.5	*Juncus effusus*
Glyceria melicaria	0.5	*Lycopodium obscurum*
Glyceria striata	0.5	*Lythrum salicaria*
Onoclea sensibilis	0.5	*Maianthemum racemosum*
Parthenocissus quinquefolia	0.5	*Osmunda regalis*
Solidago rugosa	0.5	*Ranunculus recurvatus*
Thelypteris palustris	0.5	*Rubus pubescens*
Trientalis borealis	0.5	*Solanum dulcamara*
		Solidago patula
		Stellaria longifolia
		Viola cucullata
		V. macloskeyi

Woodland Vernal Pool. plots 19 and 20 (Figs. 1 & 2)

We sampled one area that appeared to be a vernal pool although the area was labeled as a shrub swamp in Figure 3 (DEP Wetlands). This area is a long, narrow, wet swale at the west end of the park that receives seepage water from old terrace well above the river. At least in the 2007 growing season, the swale had water from April until mid-June. The soil in this area is very fine sandy loam. Up to an inch of leaf litter occurred at the upland margin of the plots, but the major un-vegetated surface was muck. The area had a canopy cover of *Acer rubrum* (Red Maple) (Table 13). The shrub layer was sparse. Shrubs with the highest cover were *Viburnum dentatum* var. *lucidum* (Northern Arrow wood), *Lindera benzoin* (Spice Bush), and saplings of Ulmus sp. (Elm). These shrubs formed a fringe around the vernal pool. The herbaceous layer, which included *Carex stricta* (Tussock sedge) and *Thelypteris palustris* (Marsh Fern), was also sparse and was concentrated within the shrub fringe. Although the surrounding forest included invasives and some exotic trees such as *Pinus sylvestris* (Scotch Pine), the area of the vernal pool had only a few individuals of *Celastris orbiculata* (Oriental Bittersweet). Our recommendation is that no management is needed at this point. We do not know if this is a certified vernal pool or not. [Ed. 1/2008. This area is close to "pool 3" listed as certifiable in the Sievert et al. report on reptiles, amphibians, and vernal pools.]

Table 13. Average cover class (c) and frequency (f) for species in the Woodland Vernal Pool Community. The number in parentheses is the average cover class for the layer. Cover codes are in the appendix.

	Layer				
Species	t1 (2)	t2 (3.5)	t3 (0.5)	s1 (1)	s2 (+)
Acer rubrum	2 1.0	3.5		+ 0.5	+
Fraxinus americana				1 1	+
Ulmus americana				+ 0.5	+
Betula lenta				+ 0.5	+
F. pensylvanica				+ 0.5	
Viburnum dentatum var. *lucidum*				1- 1.0	
Lindera benzoin				0.5 0.5	
Viburnum dentatum				1- 1.0	
Cephalanthus occidentalis					+ 0.5
Spiraea alba var. *latifolia*					+ 0.5
Cornus amomum					+ 0.5
Canopy height: t1 45 – 80 ft.	T2 35-60 ft.	s1 5-20 ft.	s2 = 1-5 ft.		

Herbaceous layer (1.5)

Two plots		Single Plot	
Carex stricta	+	*Arisaema triphyllum*	+
Thelypteris palustris	+	*Celastrus orbiculata*	+
Rubus hispidus.	+	*Lycopodium obscurum*	+
		Maianthemum canadense	+
		Onoclea sensibilis	+
		Osmunda cinnamomea	+
		Parthenocissus quinquefolia	+
		Solidago rugosa	+
		Symplocarpus foetidus	+
		Toxicodendron radicans	+

Low Energy River Bank Community plot 30 (Figs. 1 & 2)

This is a common community (S4) in Massachusetts and in RSP occurs in scattered, relatively small patches about 6-8 m^2 along the Westfield River where the bank slopes gradually into the river. It is distinctive in that trees and shrubs are missing for some distance back from the river. Vegetative cover was dense (cover class 5, >75%) and consisted of a variable mix of native and weedy, introduced species. The substrate is sand and silt and the areas in which it occurs is subject to flooding. We sampled one area with a 4x4 m plot. However, we included information from a second area in which we just made a species list. Several species listed for this community in Swain and Kearsley (2000) such as *Leersia oryzoides* (Cut Rice-grass), *Hypericum sp*. (various St. John's-worts), and *Solidago* sp. (Goldenrods) were not present. However, *L. oryzoides* occurred in areas where the river bank was raised a foot or so above the level of the river. *Xanthium strumarium* (Cocklebur) formed a solid band along the edge of the river in the sampled plot.

Table 14 Low Energy River Bank Community

Species at two sites	species at one site
Graminoids	
Calamagrostis canadensis	*Carex crinita*
Dichanthelium clandestinum	*Echinochloa muricata*
Eleocharis obtusa	*Elymus canadensis*
Phalaris arundicacea	*Eragrostis hypnoides*
	Panicum dichotimiflorum
	Scirpus cyperinus
	Scirpus cyperinus
Herbaceous species	
Calystegia sepium	*Ambrosia artemisiifolia*
Eupatorium maculatum	*Ambrosia trifida*
Mimulus ringens	*Amphicarpaea bracteata*
Polygonum sagittatum	*Aster puniceus*
Rudbeckia laciniata	*Bidens sp.*
Scutellaria lateriflora	*Commelina communis*
Trifolium repens	*Impatiens capensis*
Xanthium strumarium	*Juncus sp.*
	Linderna dubia
	Ludwigia palustris
	Lysimachia ciliata
	Medicago sp.
	Mentha arvensis
	Mollugo verticillata
	Myosoton aquaticum
	Pilea pumila
	Plantago major
	Polygonum punctatum
	Polygonum scandens
	Rorippa palustris
	Rumex sp.

Riverine Pointbar and Beach

We found an example of this community type on a sandbar near the junction of May Hollow stream and the Westfield River. It is in an area that is associated with one of our examples of a Major River Floodplain Forest (plot 15, Fig. 1)). In June, it was under water. Vegetation was very patchy and the soil consisted of sand and gravel. In September, part of the sandbar was underwater again. I made a species list for this site at the end of August (Table 15).

Table 15. Cover class for species in the Riverine Pointbar and Beach Community. Cover class codes are in the appendix.

Species	cover
Amaranthus hybridus	+
Cyperus sp.	+
Eragrostis pilosa	+
Echinochloa crus-gallii	+
Panicum capillare	+
Eleocharis obtusa	+
Polygonum hydropiper	+
Polygonum pensylvanicum	+
Digitaria sanguinalis	+

Ludwigia palustris (water purslane) occurred on the wet margins.

Survey of areas marked for logging.

We found a population of *Isotria verticillata* (Large Whorled Pogonia), a state Watch List species, in one of the areas marked for logging. However, we did not find any other plants in these areas that were not well represented in the park. Our recommendation would be to establish a buffer around the population of Large Whorled Pogonia and avoid logging in that area, however, some careful pruning in the area might encourage flowering of this species.

Some of the drier areas proposed for logging that are east of park headquarters are remarkably free of invasive plants. The disturbance associated with logging activities could create conditions that would allow the spread of invasives into this area from other parts of the park. If logging is to be done, there may be a way to do it which would reduce the soil disturbance.

References

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Sorrie, B. A. and P. Somers. 1999. The Vascular Plants of Massachusetts: a County Checklist. Massachusetts Division of Fisheries and Wildlife. Natural Heritage and Endangered Species Program. Westborough, MA.

Swain, P.C. and J. B. Kearsley. 2000. Classification of the Natural Communities of Massachusetts. (DRAFT). Massachusetts Division of Fisheries and Wildlife. Natural Heritage and Endangered Species Program. Westborough, MA.

Figures:

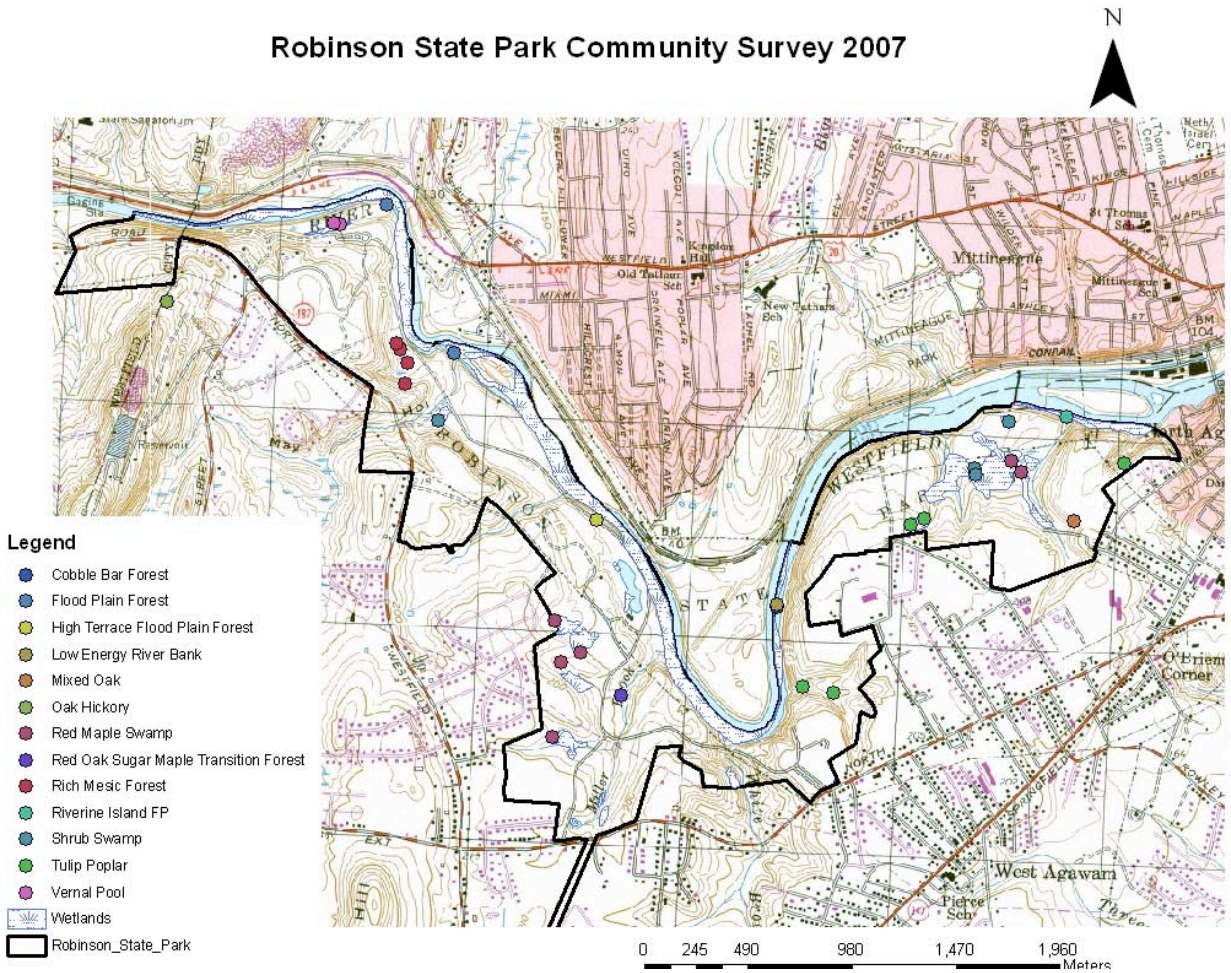
Figure 1. Topographic map of Robinson State Park showing the location of the plots sampled by
Community type. Plots 29 and 30 were adjacent to each other and are almost superimposed at the scale of the map.

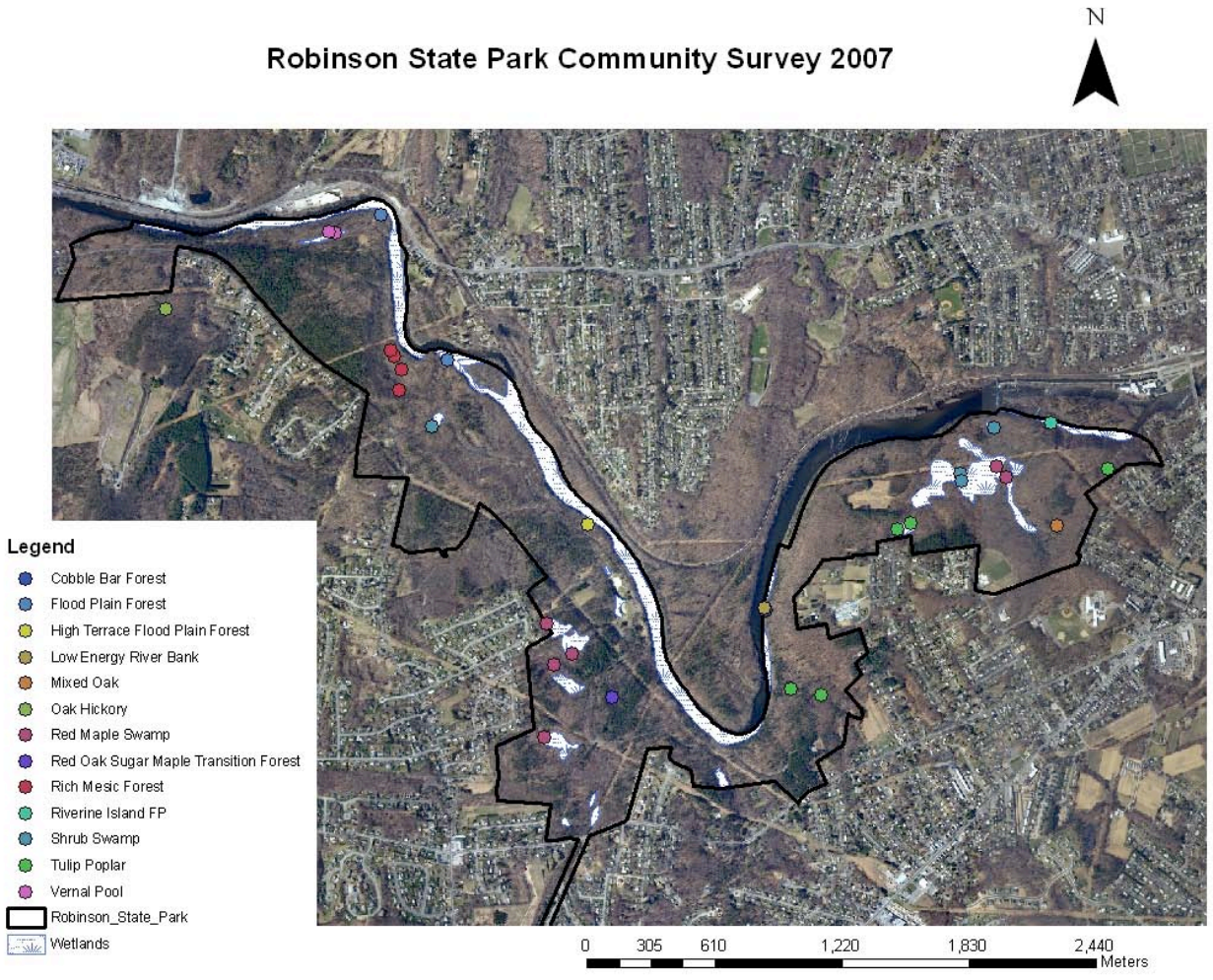
Figure 2. Ortho map of Robinson State Park showing the location of plots sampled by community. Plots 29 and 30 were adjacent to each other and are almost superimposed at the scale of the map.

Figure 3. Topographic map of Robinson State Park showing location of the plots sampled with plot number.

Figure 4. Ortho map of Robinson State Park showing location of DEP Wetlands in Robinson State Park. This map was prepared by the Massachusetts Heritage and Endangered Species Program with data from MassGIS.

Figures 1 and 2. Maps of Robinson State Park showing location of the plots sampled by communtiy type.





Robinson State Park
Natural Community Plots

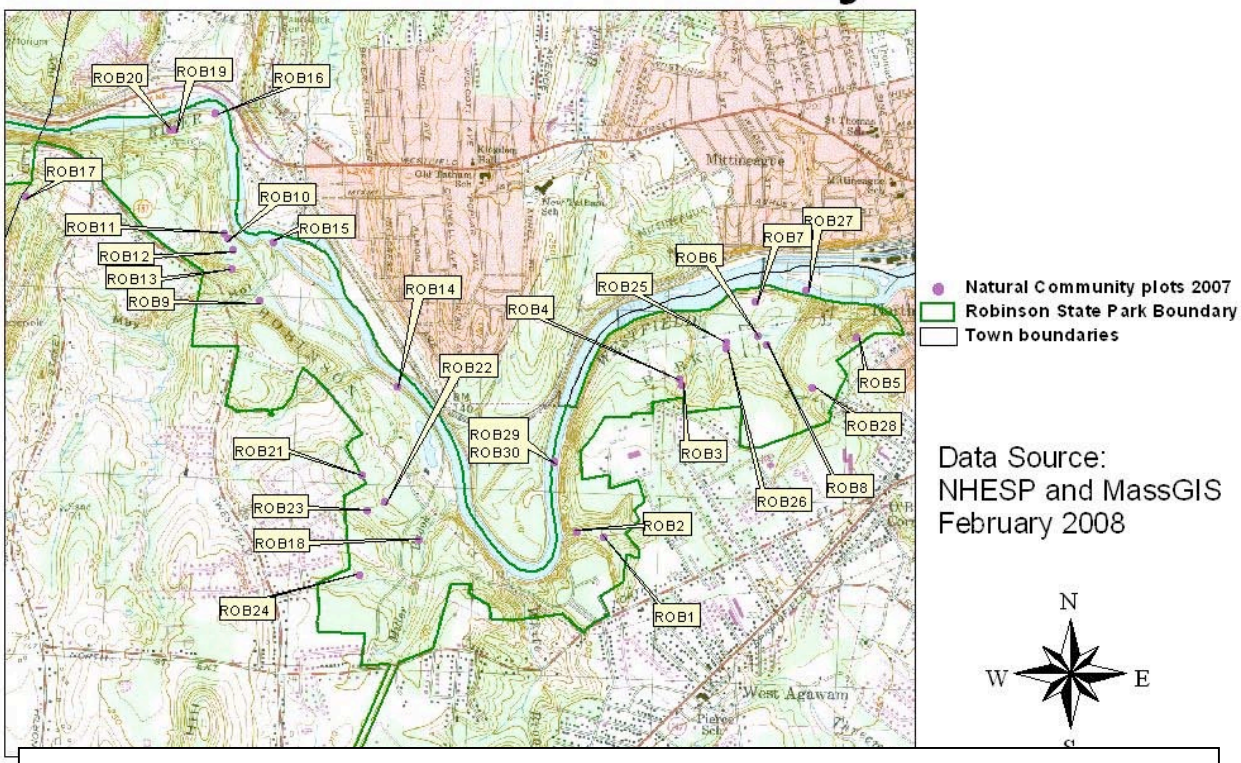


Figure 3. Natural Community plots on topo map, with plot numbers.

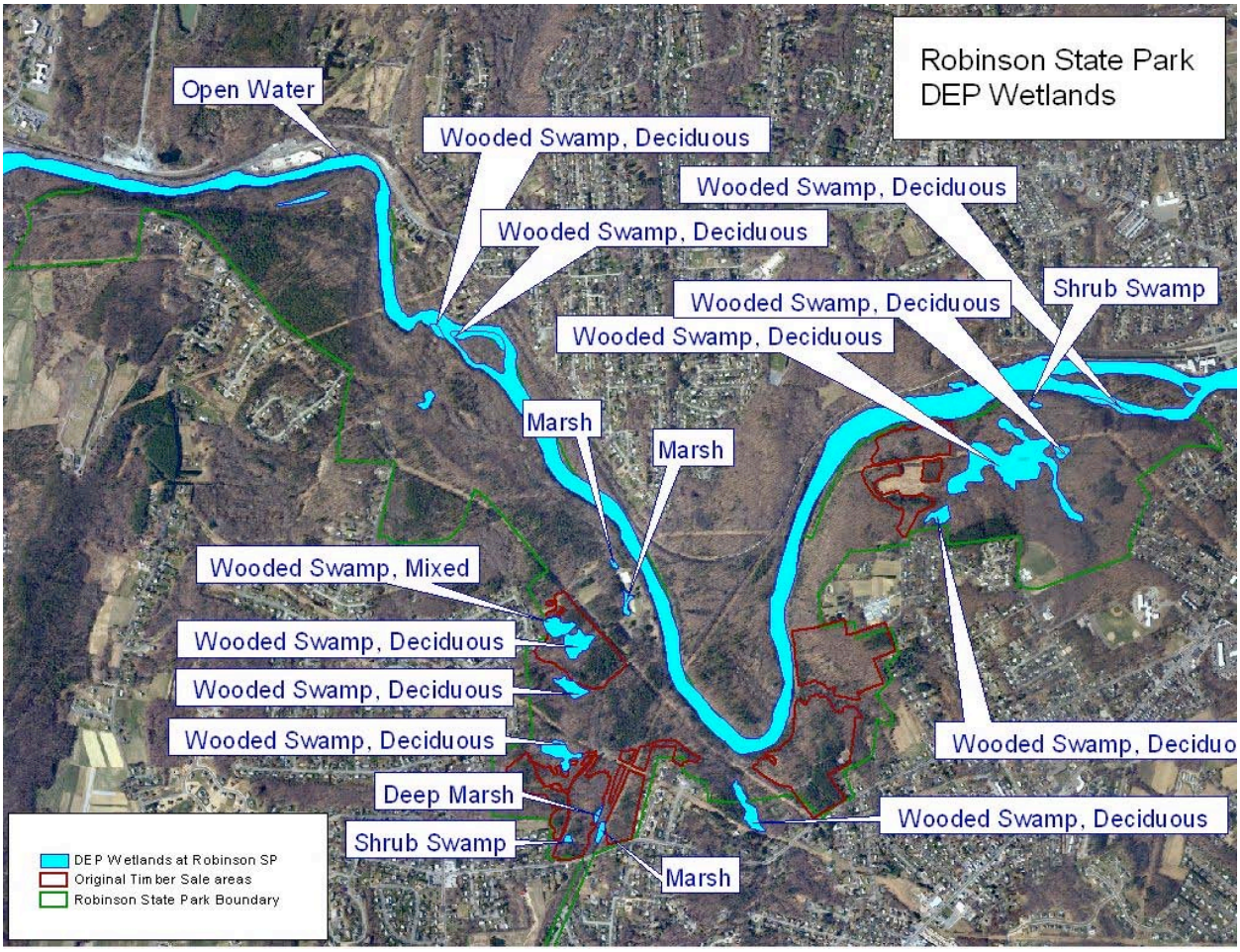


Figure 4. Orthophoto of Robinson State Park showing location of DEP Wetlands.

Appendix 1
Plants observed at Robinson State Park (399 species)
27 April – 1 October 2007
The names in bold are invasive species according to Somers *et al*. 2006.

Ferns and Fern Allies

Adiantaceae	*Adiatum pedatum*	Maidenhair-fern
Dennstaedtiaceae	*Dennstaedtia punctilobula*	Hay-scented fern
	Pteridium aquilinum	Bracken
Dryopteridaceae	*Athyrium filix-femina*	Northern Lady-fern
	Cystopteris tenuis	MacKay's Fragile Fern
	Deparia acrostichoides	Silvery Spleenwort
	Dryopteris cristata	Crested Wood-fern
	Dryopteris goldiana	Goldie's Fern
	Dryopteris intermedia	Intermediate Wood-fern
	Dryopteris marginalis	Marginal Shield Fern
	Matteuccia struthiopteris	Ostrich Fern
	Onoclea sensibilus	Sensitive Fern
	Polystichum acrostichoides	Christmas Fern
Osmundaceae	*Osmunda cinnamomea*	Cinnamon Fern
	Osmunda claytoniana	Interrupted Fern
	Osmunda regalis	Royal Fern
Polypodiaceae	*Polypodium virginianum*	Common Polypody
Thelypteridaceae	*Phegopteris connectilis*	Northern Beech-fern
	Thelypteris noveboracensis	New York Fern
	Thelypteris palustris	Marsh Fern
Equisetaceae	*Equisetum arvense*	Common Horsetail
	Equisetum hymale	Scouring Rush
	Equisetum sylvaticum	Woodland-horsetail
Lycopodiaceae	*Diphasiastrum digitatum*	Southern Ground-cedar
	Diphasiastrum tristachyum	Slender Gound-cedar
	Huperzia lucidula	Shining Clubmoss
	Lycopodium clavatum	Running Clubmoss
	Lycopodium hickeyi	Hickey's Ground-pine
	Lycopodium obscurum	Gound-pine

Gymnosperms

Cupressaceae	*Thuja occidentalis*	Arborvitae
Pinaceae	*Picea abies*	Norway Spruce
	Pinus resinosa	Red Pine
	Pinus rigida	Pitch-pine
	Pinus strobus	White Pine
	Pinus sylvestris	Scotch Pine
	Tsuga canadensis	Canadian Hemlock

Dicotyledons

Aceraceae	*Acer negundo*	Boxelder
	Acer pensylvanicum	Striped Maple
	Acer platanoides	Norway Maple

	Acer rubrum	Red Maple
	Acer saccharinum	Silver Maple
	Acer saccharum	Sugar Maple
Amaranthaceae	*Amaranthus hybridus*	Green Amaranth
Anacardiaceae	*Rhus hirta*	Staghorn-sumac
	Toxicodendron radicans	Poison-ivy
	Toxicodendron vernix	Poison-sumac
Apiaceae	*Angelica atropurpurea*	Purplestem-angelica
	Cicuta maculata	Water-hemlock
	Cryptotaenia canadensis	Honewort
	Daucus carota	*Q*ueen Anne's Lace
	Hydrocotyle americana	Swamp Pennywort
	Osmorhiza longistylis	Long-styled Sweet Cicely
	Sanicula trifoliolata	Trefoil
	Zizia aurea	Golden Alexanders
Apocynaceae	*Apocynum cannabinum*	Indian Hemp
Aquifoliaceae	*Ilex verticillata*	Winterberry
Araliaceae	*Aralia nudicaulis*	Wild Sarsaparilla
	Aralia racemosa	Spikenard
Asclepiadaceae	*Asclepias amplexicaulis*	Blunt-leaved Milkweed
	Asclepias incarnata var pulchra	Swamp-milkweed
	Asclepias syriaca	Common Milkweed
Asteraceae	*Achillea millefolium*	Yarrow
	Ageratina altissima	White Snakeroot
	Ambrosia artemisiifolia	*R*agweed
	Ambrosia trifida	Giant Ragweed
	Artemisia vulgaris	Mugwort
	Aster acuminatus	Whorled Wood-aster
	Aster cordifolius	Blue Heart-leaf Aster
	Aster divaricatus	White Wood-aster
	Aster lateriflorus	*Calico Aster*
	Aster macrophylla	Big-leaved Aster
	Aster puniceus	Blue Heart-leaf Aster
	Aster umbellatus	Tall Flat-topped Aster
	Bidens sp.	Devil's Pitchforks, Beggar-ticks
	Bidens tripartita	Leafy-bracted Beggar-ticks
	Bidens vulgata	Tall beggar-ticks
	Erigeron strigosus	Rough Fleabane
	Eupatorium perfoliatum	Boneset
	Eupatorium fistulosum	Tumpet-weed
	Eupatorium maculatum	Spotted Joe-pye-weed
	Eupatorium rotundifolium v. ovatum	Hairy Boneset
	Euthamia graminifolia	Flat-topped Goldenrod
	Galinsoga quadriradiata	Gallant Soldier
	Gnaphalium uliginosum	Low Cudweed
	Helianthus decapetalus	Thin-leaved Sunflower
	Hieracium paniculatum	Panicled Hawkweed
	Lactuca canadensis	Yellow Wild Lettuce
	Prenanthes altissima	Tall Rattlesnake-root
	Prenanthes trifoliolata	Gall-of-the-earth
	Rudbeckia laciniata	Tall-headed Coneflower
	Solidago canadensis v. canadensis	Canada Goldenrod
	Solidago canadensis v. scabra	Tall Goldenrod
	Solidago bicolor	Silverrod
	Solidago caesia	Bluestem-goldenrod
	Solidago flexicaulis	Zigzag Goldenrod

	Solidago gigantea	Late Goldenrod
	Solidago patula	Rough-leaved Goldenrod
	Solidago puberula	Downey Goldenrod
	Solidago rugosa	Rough-stemmedGoldenrod
	Symphotrichium lateriflorum	Calico Aster
	Tussilago farfara	Colt's Foot
	Xanthium strumarium	Cocklebur
Balsaminaceae	*Impatiens capensis*	Orange Jewelweed
	Impatiens pallida	Yellow Jewelweed
Berberidaceae	***Berberis thunbergii***	Japanese Barberry
Betulaceae	*Alnus incana subsp. rugosa*	Speckled Alder
	Betula alleghaniensis	Yellow Birch
	Betula lenta	Black Birch
	Betula nigra	River Birch
	Betula papyrifera	Paper Birch
	Betula populifolia	Grey Birch
	Carpinus caroliniana	Musclewood
	Corylus americana	Hazelnut
	Corylus cornuta	Beaked Hazelnut
	Ostrya virginiana	Hop-hornbeam
Boraginaceae	*Myosotis scorpioides*	True Forget-me-not
Brassicaceae	***Alliaria petiolata***	Garlic-mustard
	Boecheria laevigata	Smooth Rock-cress
	Cardamine impatiens	Bushy Rock-cress
	Cardamine pensylvanica	Common Bittercress
	Cardamine pratense	Cockoo-flower
	Dentaria diphylla	Broad-leaved Toothwort
	Dentaria laciniata	Cut-leaved Toothwort
	Draba verna	Whitlow-grass
	Hesperis matronalis	Dame's Rocket
	Rorippa nasturtium-aquaticum	Water-cress
	Rorippa palustris	Marsh Yellow-cress
Campanulaceae	*Lobelia cardinalis*	Cardinal-flower
	Lobelia siphilitica	Great Blue Lobelia
Caprifoliaceae	*Diervilla lonicera*	Bush-honeysuckle
	Lonicera canadensis	Fly-honeysuckle
	Lonicera maackii	Amur Honeysuckle
	Lonicera morrowii	Morrow Honeysuckle
	Lonicera x bella	Bell's Honeysuckle
	Sambucus canadensis	Common Elderberry
	Viburnum acerifolium	Maple-leaf Viburnam
	Viburnum dentatum v. lucidum	Northern Arrow-wood
	Viburnum nudum v. cassinoides	Wild Raisin, Witherod
Caryophyllaceae	*Gypsophila muralis*	Mist-gypsophila
	Myosoton aquaticum	Giant Chickweed
	Stellaria longifolia	Long-leaved Starwort
	Stellaria media	Common Chickweed
Celastraceae	***Celastrus orbiculata***	Oriental Bittersweet
	Euonymus alata	Winged Euonymus
	Euonymus europaea	European Spindle-tree
Convovlulaceae	*Calystegia sepium*	Wild Morning-glory
Cornaceae	*Cornus alternifolia*	Alternate-leaved Dogwood
	Cornus amomum	Silky Dogwood
	Cornus florida	Flowering Dogwood
	Cornus rugosa	Round-leaved Dogwood
	Cornus sericea	Red Osier Dogwood

Crassulaceae	*Penthorum sedoides*	Ditch-stonecrop
Cucurbitaceae	*Echinocystis lobata*	Prickly Cucumber
Cuscutaceae	*Cuscuta compacta*	Compact Dodder
Elaeagnaceae	***Elaeagnus umbellata***	Autumn-olive
Ericaceae	*Gaultheria procumbens*	Wintergreen
	Gaylussacia baccata	Black Huckleberry
	Kalmia angustifolia	Sheep Laurel
	Kalmia latifolia	Mountain Laurel
	Lyonia ligustrina	Maleberry
	Rhododendron periclyminoides	Pinxter-flower
	Vaccinium angustifolium	Lowbush-blueberry
	Vaccinium corymbosum	Highbush-blueberry
	Vaccinium pallidum	Early Sweet blueberry
Fabaceae	*Amphicarpaea bracteata*	Hog-peanut
	Aprios americana	Groundnut
	Desmodium canadense	Canadian Tick-trefoil
	Desmodium nudiflorum	Naked Tick-trefoil
	Medicago lupulina	Black Medick
	Robinia pseudoacacia	Black Locust
	Trifolium repens	White Clover
Fagaceae	*Castanea dentata*	American Chestnut
	Fagus grandifolia	American Beech
	Quercus alba	White Oak
	Quercus bicolor	Swamp White Oak
	Quercus coccinea	Scarlet Oak
	Quercus ilicifolia	Scrub-oak
	Quercus prinus	Chestnut Oak
	Quercus rubra	Red Oak
	Quercus velutina	Black Oak
Fumariaceae	*Dicentra cucullaria*	Dutchman's Breeches
Gentianaceae	*Gentiana clausia*	Bottle-gentian
Geraniaceae	*Geranium maculatum*	Wild Geranium
Hamamelidaceae	*Hamamelis virginiana*	Witch-hazel
Hippocastanaceae	*Aesculus hippocastanum*	Horse-chestnut
Hydrophyllaceae	*Hydrophyllum virginianum*	Virginia Waterleaf
Juglandaceae	*Carya alba*	Mockernut
	Carya cordiformis	Bitternut
	Carya glabra	Pignut
	Carya ovata	Shagbark-hickory
	Juglans ailanthifolia	Japanese Walnut
	Juglans nigra	Black Walnut
Lamiaceae	*Collinsonia canadensis*	Northern Horse-balm
	Elsholtzia ciliata	Elsholtzia
	Glechoma hederacaea	Gill-over-the-ground
	Lycopus sp.	Water-horehound
	Mentha arvensis	Field-mint
	Monarda fistulosa	Wild Bergamot
	Scutellaria galericulata	Marsh Scullcap
	Scutellaria lateriflora	Mad-dog Skullcap
Lauraceae	*Lindera benzoin*	Spice Bush
	Sassafras albidum	Sassafras
Lythraceae	***Lythrum salicaria***	Purple Loosestrife
Magnoliaceae	*Liriodendron tulipifera*	Tulip-tree
Melastomataceae	*Rhexia virginica*	Northern Meadow-beauty
Menispermaceae	Menispermum canadense	Moonseed
Molluginaceae	*Mollugo verticillata*	Carpetweed

Monotropaceae	*Monotropa uniflora*	Indian Pipe
Myricaceae	*Comptonia peregrina*	Sweet Fern
Nyssaceae	*Nyssa sylvatica*	Black Gum, Tupelo
Oleaceae	*Fraxinus americana*	White Ash
	Fraxinus pensylvanica	Green Ash
	Ligustrum obtusifolium	Japanese Privet
Onagraceae	*Circaea lutetiana subsp. canadensis*	Enchanter's Nightshade
	Epilobium sp	Willow-herb
	Ludwigia palustris	Water Purslane
Papaveraceae	Chelidonium majus	Celandine
	Sanguinaria canadensis	Bloodroot
Phytolaccaceae	*Phytolacca americana*	Pokeweed
Plantaginaceae	*Plantago major*	Common Plantain
	Plantago rugellii	American Plantain
Platanaceae	*Platanus occidentalis*	Sycamore
Polygalaceae	*Polygala pauciflora*	Fringed Polygala
Polygonaceae	Polygonum cespitosum var longisetum	Chinese Smartweed
Polygonaceae	***Polygonum cuspidatum***	Japanese Knotweed
	Polygonum hydropiper	Water-pepper
	Polygonum pensylvanicum	Smartweed
	Polygonum sagittatum	Tearthumb
	Polygonum. scandens	Winged Bindweed
	Polygonum virginianum	Jumpseed
	Rumex obtusifolius	Bitter Dock
Polygonaceae	*Rumex sp.*	Dock
Primulaceae	*Lysimachia ciliata*	Fringed Loosestrife
	Lysimachia quadrifolia	Whorled Loosestrife
	Lysimachia terrestris	Swamp-candles
	Lysimachia vulgaris	Garden-loosestrife
	Trientalis borealis	Starflower
Pyrolaceae	*Chimaphila maculata*	Spotted Wintergreen
	Chimaphila umbellata	Pipsissewa
	Pyrola elliptica	Elliptic Shinleaf
Ranunculaceae	*Actaea pachypoda*	Doll's Eyes
	Actaea rubra	Red Baneberry
	Aquilegia canadensis	Wild Columbine
	Anemone quinquefolia	Wood-anemone
	Anemone virginiana	Stout Thimbleweed
	Clematis virginiana	Virgin's Bower
	Hepatica nobilis v. americana	Blunt-lobed Hepatica
	Ranunculus abortivus	Kidney-leaf Buttercup
	Ranunculus pensylvanicus	Bristly Buttercup
	Ranunculus recurvatus	Hooked Buttercup
	Ranunculus repens	Creeping Buttercup
	Ranunculus scleratus	Cursed Crows-foot
	Thalictrum pubescens	Tall Meadow-rue
Rhamnaceae	*Ceanothus americanus*	New Jersey Tea
	Rhamnus cathartica	Common Buckthorn
	Rhamnus frangula	Glossy Buckthorn
Rosaceae	*Agrimonia striata*	Coarse Agrimony
	Amelanchier spp.	Shadbush
	Aronia melanocarpa	Black Chokeberry
	Aronia prunifolia	Purple Chokeberry
	Crataegus sp.	Hawthorn
	Geum canadense	White Avens
	Prunus serotina	Black-cherry

	Rosa multiflora	Multiflora Rose
	Rubus allegheniensis	Common Blackberry
	Rubus hispidus	Bristly-dewberry
	Rubus occidentalis	Black Raspberry
	Rubus pubescens	Swamp-dewberry
	Spiraea alba v. latifolia	Meadowsweet
	Spiraea tomentosa	Steeple-bush
Rubiaceae	*Cephalanthus occidentalis*	Buttonbush
Rubiaceae	*Galium asprellum*	Rough Bedstraw
	Galium obtusum	Blunt-leaved Bedstraw
Rubiaceae	*Galium trifidum*	Northern Three-lobed Bedstraw
	Mitchella repens	Partridge-berry
Salicaceae	*Populus deltoides*	Cottonwood
	Populus grandidentata	Big-toothed Aspen
	Populus tremuloides	Quaking Aspen
	Salix humilis	Small Pussy-willow
	Salix discolor	Large Pussy-willow
	Salix nigra	Black Willow
	Salix sericea	Silky Willow
Saxifragaceae	*Chrysosplenium americanum*	Golden Saxifrage
Scrophulariaceae	*Agalinus tenuifolia*	Slender Gerardia
	Aureolaria flava	Smooth False Foxglove
	Chelone glabra	White Turtlehead
	Mimulus ringens	Blue Monkey Flower
	Scrophularia nodosa	Wood-figwort
	Veronica beccabunga v.americana	Speedwell
Solanaceae	*Solanum dulcamara*	Bittersweet Nightshade
Tiliaceae	*Tilia americana*	Basswood
Ulmaceae	*Ulmus americana*	American Elm
	Ulmus rubra	Slippery Elm
Urticaceae	*Boehmeria cylindrica*	False Nettle
	Laportea canadensis	Wood-nettle
	Pilea pumila	Clearweed
	Urtica dioica	Stinging Nettle
Verbenaceae	*Verbena hastata*	Blue Vervain
	Verbena urticifolia	White Vervain
Violaceae	*Viola cucullata*	Blue Marsh Violet
	Viola lanceolata	Lance-leaf Violet
	Viola macloskeyi	Northern White Violet
	Viola pedata	Bird's Foot Violet
	Viola x primulifolia	Primrose-leaf Violet
	Viola pubescens v. pubescens	Downy Yellow Violet
	Viola sagittata	Arrow-leaf Violet
	Viola sororia	Common Blue Violet
Vitaceae	*Parthenocissus quinquefolia*	Virginia Creeper
Vitaceae	Vitis riparia	River-bank Grape

Monocotyledons

Alismataceae	*Alisma plantago-aquatica var. parvflorum*	Lesser Water-plantain
Alismataceae	*Sagittaria latifolia*	Common Arrowhead
Araceae	*Arisaema triphyllum*	Small Jack-in-the-pulpit
Araceae	*Symplocarpus foetidus*	Skunk-Cabbage
Commelinaceae	*Commelina communis*	Dayflower
Cyperaceae	Carex. amphibola var. turgida	Gray Sedge

	Carex albicans	Variable Sedge
	Carex bromoides	Brome-like Sedge
	Carex crinita	Awned Sedge
	Carex debilis var. rudgei	Southern Stalked Sedge
	Carex gracillima	Graceful Sedge
	Carex hirtifolia	Hairy-leaved Sedge
	Carex intumescens	Bladder-sedge
	Carex laxiculmis var. laxiculmis	Spreading Woodland-sedge
	Carex lurida	Sallow Sedge
	Carex pensylvanica	Pennsylvania Sedge
	Carex projecta	Necklace Broomsedge
	Carex radiata	Star-sedge
	Carex sprengelii	Long-beaked Sedge
	Carex stipata	Awl-fruited Sedge
	Carex stricta	Tussock-sedge
	Carex swanii	Swan's Sedge
	Carex tribuloides	Blunt Broom-sedge
	Carex vulpinoidea	Fox-sedge
	Eleocharis acicularis	Needle Spike-rush
	Eleocharis obtusa	Soft-stemmed Spike-rush
	Scirpus cyperinus	Wool-grass
	Scirpus expansus	Spreading Bulrush
	Scirpus hattorianus	Meadow-bulrush
	Scirpus verecundus	Woodland Bulrush
Iridaceae	*Iris versicolor*	Northern Blue Flag
Juncaceae	*Juncus effusus*	Soft Rush
	Juncus tenuis	Path Rush
	Luzula acuminata	Drooping Wood-rush
	Luzula multiflora	Common Wood-rush
Lemnaceae	*Lemna minor*	Duckweed
Liliaceae	*Allium tricoccum*	Wild Leek
	Erythronium americanum	Trout Lily
	Hemerocallis sp.	Day-lily
	Lilium canadense	Canada Lily
	Maianthemum canadense	Canada Mayflower
	Maianthemum racemosum	False Solomon's Seal
	Maianthemum stellatum	Starry Solomon's Seal
	Medeola virginiana	Indian Cucumber
	Polygonatum pubescens	Solomon's Seal
	Trillium erectum	Purple Trillium
	Uvularia perfoliata	Perfoliate Bellwort
	Uvularia sessilifolia	Wild Oats
	Veratrum viride	False Hellebore
Orchidaceae	*Cypripedium acaule*	Pink Lady's Slipper
Orchidaceae	*Epipactis helleborine*	Helleborine
Orchidaceae	*Isotria verticillata*	Whorled Pogonia
Poaceae	*Anthoxanthum odoratum*	Sweet Vernal Grass
	Brachyelytrum septentrionale	Woodgrass
	Bromus ciliatus	Fringed Brome
	Bromus latiglumis	Tall Brome
	Calamagrostis canadensis	Canada Reedgrass
	Cinna arundinacea	Common Woodreed
	Digitaria sanguinalis	Tall Crab-grass
	Dichanthelium clandestinum	Deer-tongue
	Echinochloa crus-galli	Barnyard-grass
	Echinochloa muricata	Barnyard-grass

	Elymus canadensis var canadensis	Canada Wild Rye
	Elymus hystrix	Bottlebrush-grass
	Elymus riparius	Riverbank Wild Rye
	Elymus virginicus	Virginia Wild Rye
	Eragrostis hypnoides	Sandbar-lovegrass
	Eragrostis pilosa	India Lovegrass
	Festuca subverticillata	Nodding Fescue
	Glyceria melicaria	Slender Managrass
	Glyceria striata	Fowl Meadow-grass
	Leersia oryzoides	Rice Cut-grass
	Leersia virginica	White Grass
	Microstegium vimineum	Japanese Stiltgrass
	Muhlenbergia frondosa	Leafy-muhly
	Panicum capillare	Witch-grass
	Panicum dichotomiflorum	Fall Panic Grass
	Phalaris arundinacea	Reed Canary-grass
	Phragmites australis	Common Reed
	Poa alsodes	Floodplain-speargrass
	Poa compressa	Flat-stemmed Bluegrass
	Poa palustris	Fowl-meadow Grass
	Poa saltuensis	Woodland Speargrass
	Schizachyrium scoparium	Little Bluestem
	Setaria glauca	Yellow Foxtail
Pontederiaceae	*Pontederia cordata*	Pickerel-weed
Smilacaceae	*Smilax herbacea*	Carrion-flower
	Smilax rotundifolia	Common Greenbrier
Sparganiaceae	*Sparganium americanum*	Common Bur-reed
Typhaceae	*Typha latifolia*	Common Cat-tail

Appendix 2

Plant and natural community report

Massachusetts Natural Heritage & Endangered Species Program
Form 2 “Natural Community Summary and ranking”
Form 3 “Quantitative Community characterization” - plots
For the communities sampled at
Robinson State Park
Agawam, Massachusetts

2007

Plot 17, which was an Oak-Hickory Forest plot, was outside the Park, but the form is included in here.

From: Natural Community Form 3 Instructions for Combined Allowable Harvest & Biological Inventory of DFW Lands (June 2007 version)

C. VEGETATION: Protocol for community form (Form 3, back).

40) Strata / life forms - Visually divide the community into vegetation layers. Indicate a distinct range of height above ground for each stratum (e.g., 50-80 feet for the tree canopy, T2). Then record the total percent cover for each stratum within the relevé. All vegetation layers may not be present at all plots. Remember that the height ranges for individual vegetation layers cannot overlap. However, the % cover may total to >100% since tree canopy occurs above shrub canopy, and shrub canopy occurs above herbaceous vegetation. Also, if gaps occur between vegetation layers, represent those gaps in the height data (e.g., if there is a 10 foot gap between the bottom of the tree canopy and the top of the tree sub-canopy, you might record their heights as 50-80 feet and 20-40 feet, respectively).

41) Relevé Data - list each species and the corresponding abundance/cover class within each stratum.
If a plant is in flower or fruit, indicate in parenthesis with the abbreviation (see example below). Separate each stratum with a blank line. On the first line of each stratum, record the stratum code. Additional species observed outside the plot but in the same forest type should be added, but listed in parentheses.

Braun-Blanquet Cover/abundance values (modified):

+ < 1 % cover
1 = 1 - 5 % cover
2 = 6 – 25 % cover
3 = 26-50 % cover
4 = 51-75 % cover
5 > 75 % cover

Stratum code
Species name1 % cover
Species name2 % cover

For example:

T2	Acer saccharum	3	H	Aster infirmus (fl)	1
	Pinus strobus	2		Aster paternus	1
	Quercus rubra	1		Geum canadense (fr)	+
				Viola sp.	1
				Eupatorium rugosum	1
T3	Tsuga canadensis	2		Vaccinium angustifolium	2
				Osmunda cinnamomea	2
				Acer rubrum (6 indiv.)	+
S1	Cornus ammomum	1			
	Viburnum lentago	1		(Carex stricta	3)

Compiled by Nancy J. Putnam and John J. Scanlon

Order of Community Forms in Appendix 2

Each community type has a summary Form 2 followed by the Form 3s with plot data for plots taken in the community type at Robinson. S2 and S3 (Priority types of Natural Communities) are first, with the more common S4 and S5 types at the end. They are arranged alphabetically within the two sections.

Cobble Bar Forest (S2), Plot 29
High Terrace Floodplain Forest (S2), Plot 14
Major River Floodplain Forest (S2), Plots 15, 16
Major River Floodplain Forest (Riverine Island Floodplain Forest subtype), Plot 27
Oak Tulip Tree Forest (S?), Plots 1-5, Lirio1
Rich Mesic Forest (S3), Plots 10, 11, 12
Riverine Pointbar and Beach Community (S3), no plots

Low Energy River Bank Community (S4), Plot 30
Mixed Oak Forest (S5), Plot 28,
Plot 17, called Oak Hickory Forest (S4), outside the Park
Red Maple Swamp (S5), Plots 6, 8, 21, 22, 23, 24
Red Oak Sugar Maple Transition Forest (S4), Plot 18
Shrub Swamp (S5), Plot 7, 9 , 13,19, 20, 25, 26

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Cobble Bar Forest (a community similar to Cobble Bar Forest) S2

NatureServe Association Name (Optional): _____

Survey Date: 7/16/2007 Today's Date: 1/25/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Karen Searcy, Sydne Record, and Lena Fletcher

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-27 PCS Town Name: Agawam

Directions to site: Robinson State Park, plot ROB29. patches along straight stretches of the Westfield River.

GPS Point(s) Y Yes___No___ Latitude 42.08979 Longitude -72.66093

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): The dominant trees in this community are Sycamore (Platanus occidentalis), Silver maple (Acer saccharinum), and Slippery Elm (Ulmus rubra). The Understory includes Ironwood (Carpinus caroliniana), and invasive shrubs such as Japanese Barberry (Berberis thunbergii) and viny Oriental Bittersweet (Celastrus orbiculata). The distinctive thing about this community is the tall herbaceous layer that is dominated by Spotted Joe-Pye-weed (Eupatorium maculatum) and Forest Sunflower (Helianthus decapetalus). Canada Lily (Lilium canadense) is present as is Bottlebrush Grass (Elymus hystrix) and typically several other species of Elymus. This community occurs in patches along straight stretches of the Westfield River.

Estimated size (acres) GIS Acres (if available) **12**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): This community resembles the "Cobble Bar Forest" community but the substrate is sand or silt, rather than cobbles. It is found along straight stretches of the Westfield River where the river bank is low. The areas of this community flood regularly. The community occurs as a narrow strip between the river and the base of the river bluffs. Most of the disturbance is natural.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): The major source of disturbance is flooding. Invasive plants such as Japanese Barberry (Berberis thunbergii), Oriental Bittersweet (Celastrus orbiculata), Garlic Mustard (Alliaria petiolata), Multiflora Rose (Rosa multiflora) and privet (Ligustrum sp.) are present. I think a successful effort could be made to remove some of the invasive shrubs..

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
None seen.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): This community appears to be common within the park and needs more sampling to fully characterize it. The area shown on the map is only tentative..

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: As an example of this community within the park _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): This community is common and aside from some invasive shrubs is diverse and intact. _____

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): COBBLE BAR FOREST
2. GPS Point: ROB29
3. Assigned Type: COBBLE BAR FOREST
5. Site name: Robinson SP
4. Lat.: 42.0897 Lon.: -72.66087
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In the east central part of Robinson SP, along the Westfield, south of the Powerline crossing.

11. Survey Date: 7/16/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Karen Searcy, Lena Fletcher

B. Environmental Description

14. Plot #: ROB29 Image Annot #: Elevation: 100 Feet

17. Topographic Position:
Channel Bed

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Convex

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 8
Max. Length (ft): 15
Decay Class: B
Mean Diameter (in): 6
CoverClass: 1

25. Dom. Unvegetated: Sand
26. Litter Depth: 0 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Sand
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
moist, periodically inundated
Invasives: Japanese barberry, Oriental bittersweet, multiflora rose

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB29
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous

38. Physiognomic Forest
39. Photo Cover Type: mixed hardwoods
40. Field Observed CovType: MH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	4
T2	NA	4
T3	NA	1
S1	NA	+
S2	NA	3
H	NA	5
V	NA	1

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Platanus occidentalis*	4	41.2,49.8 cm
T2	*Ulmus rubra*	3	22.9,20.9 cm
T2	*Acer saccharinum*	2	26.8 cm
T3	*Salix sp.*	1	24.4 cm
T3	*Ulmus rubra*	1	13.1 cm
	Shrub		
S1	*Carpinus caroliniana*	+	
S1	*Ligustrum ovalifolium*	+	
S2	*Berberis thunbergii*	2	
S2	*Celastrus orbiculata*	2	
S2	*Ligustrum ovalifolium*	+	
	Herb/Graminoid		
H	*Eupatorium maculatum*	3	
H	*Helianthus sp.*	3	
H	*Cinna arundinacea*	1	
H	*Onoclea sensibilis*	1	
H	*Alliaria petiolata*	+	
H	*Amphicarpaea bracteata*	+	
H	*Arisaema triphyllum*	+	
H	*Bidens sp.*	+	
H	*Elymus hystrix*	+	
H	*Equisetum arvense*	+	
H	*Laportea canadensis*	+	
H	*Lilium canadense*	+	
H	*Lysimachia ciliata*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Polygonatum pubescens*	+	
H	*Polygonum virginianum*	+	
H	*Rosa multiflora*	+	
H	*Rudbeckia laciniata var. ?*	+	
H	*Thalictrum pubescens*	+	
H	*Toxicodendron radicans*	+	
H	*Viola sp.*	+	
H	*Xanthium sp.*	+	
	Vine/Liana		
V	*Celastrus orbiculata*	1	

Surveyed By: Sydne Record 7/16/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): High Terrace floodplain Forest (S2)

NatureServe Association Name (Optional):

Survey Date: 6/15/2007 Today's Date: 1/24/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Lena Fletcher, and Kristina Ferrare

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 08-02-27 PCS Town Name: Agawam

Directions to site: Robinson State Park, plot ROB14.

GPS Point(s) Y Yes No Latitude 42.09331 Longitude -72.67126

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): This community has some trees that are characteristic of the floodplain area in Robinson SP such as sycamore (Platanus occidentalis) and basswood (Tilia americana). Most of the canopy and subcanopy is dominated by more upland species such as oak (Quercus spp.), Black Birch (Betula lenta), elm (Ulmus spp.), and Red Maple (Acer rubrum). The soil is moist and the major understory shrub is spicebush (Lindera benzoin). The understory includes patches of spring ephemerals such as Dutchman's Breeches (Dicentra cucullaria) and Trout Lily (Erythronium americanum). However, the most common species in the herbaceous layer were Poison Ivy (Toxicodendron radicans) and Virginia Creeper (Parthenocissus quinquefolia).

Estimated size (acres) GIS Acres (if available) **16**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities):This community is located on a relatively low bluff above the river from approximately the swimming area to about May Hollow Brook. It is probably not continuous. The soil is moist, sandy loam and the soil surface is covered with leaf litter. The surface slopes generally from the road to a steep bank above the river. It is crossed by some informal trails to the river and one designated trail It probably does not flood. This community is heavily invaded. One of the major invasives in this area is European Spindle-tree (Euonymus europea).

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): The major threat to this community is invasive plants. In a few places invasives were so dense that it was impossible to walk through. It would be a major undertaking to remove the invasives and might do more damage than good. Invasives include Winged Euonymus (Euonymus alata), European Spindle-tree (E. europea), Japanese Barberry (Berberis thunbergii), Multiflora Rose (Rosa multiflora), and Oriental Bittersweet (Celastrus orbiculata).

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Walking trails.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site):

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): The plot chosen had fewer invasives than most areas that seemed to support this community.-type. The total extent of this community was not measured..

Owner's Name (if known): DCR, Telephone: (__)

Address:

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site):

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Lower because of invasives..

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Good continuity between patches. [Overall rank is for the park.]

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): This community occurrence is probably relatively stable..

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): HIGH-TERRACE FLOODPLAIN FOREST
2. GPS Point: ROB14
3. Assigned Type: HIGH-TERRACE FLOODPLAIN FOREST
5. Site name: Robinson SP
4. Lat.: 42.09331 Lon.: -72.67126
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Plot is just west of the central part of Robinson State Park, just northeast) of the park road at the top of the slope to the river,

11. Survey Date: 6/15/2007 Previous Observations:
12. Surveyer: Lena Fletcher Other surveyers: Kristina Ferrare

B. Environmental Description

14. Plot #: ROB14
Image Annot #:
Elevation: 115 Feet

17. Topographic Position:
Step in Slope

18. Topographic sketch

20. Slope Class: Gentle

21. Slope
Vertical: Linear
Horizontal: Concave

19. Slope aspect: 60 degrees

22. Downed
Max. Diameter (in): 16
Max. Length (ft): 25
Decay Class: A
Mean Diameter (in): 7
CoverClass: 1

23. Fuel Load: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 4 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
Plot fairly homogeneous
Invasives: Japanese barberry, Oriental bittersweet, winged euonymus, multiflora rose

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB14
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: MH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	4
T3	NA	2
S1	NA	3
S2	NA	4
H	NA	4

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Platanus occidentalis*	2	87.2,47.6 cm
T1	*Tilia americana var. ?*	2	67.1,46.7,43.0 cm
T2	*Betula lenta*	2	21.5,16.4,28.4 cm
T2	*Quercus rubra var. ?*	1	22.2 cm
T2	*Quercus velutina*	1	34.3 cm
T2	*Ulmus rubra*	1	26.0 cm
T3	*Betula lenta*	2	18.5,20.0 cm
T3	*Acer rubrum var. ?*	1	16.8 cm
T3	*Ulmus rubra*	1	10.2,11.9 cm
	Shrub		
S1	*Lindera benzoin*	2	
S1	*Acer saccharum*	1	
S1	*Betula lenta*	1	
S1	*Euonymus alata*	1	
S1	*Fagus grandifolia*	1	
S1	*Parthenocissus quinquefolia*	1	
S1	*Toxicodendron radicans*	1	
S1	*Ulmus rubra*	1	
S1	*Carya cordiformis*	+	
S2	*Euonymus alata*	2	
S2	*Lindera benzoin*	2	
S2	*Berberis thunbergii*	1	
S2	*Acer saccharum*	+	
S2	*Fraxinus americana*	+	
S2	*Rosa multiflora*	+	
S2	*Ulmus rubra*	+	
S2	*Viburnum acerifolium*	+	
	Herb/Graminoid		
H	*Parthenocissus quinquefolia*	2	
H	*Toxicodendron radicans*	2	
H	*Arisaema triphyllum*	1	
H	*Celastrus orbiculata*	1	
H	*Onoclea sensibilis*	1	
H	*Aster divaricatus*	+	
H	*Athyrium filix-femina var. ?*	+	
H	*Impatiens sp.*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Matteuccia struthiopteris*	+	
H	*Osmunda claytoniana*	+	
H	*Polygonatum pubescens*	+	
H	*Polygonum sp. (cf scandens)*	+	
H	*Rosa multiflora*	+	
H	*Symplocarpus foetidus*	+	
H	*Thelypteris noveboracensis*	+	
H	*Viburnum acerifolium*	+	
H	*Viburnum dentatum var. ?*	+	
H	*Viola sp.*	+	

Surveyed By: Lena Fletcher 6/15/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Major River floodplain Forest (S2)

NatureServe Association Name (Optional): _____

Survey Date: 6/15/2007 Today's Date: 1/23/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Kristina Ferrare and Lena Fletcher

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-27 PCS Town Name: Agawam

Directions to site: Robinson State Park, plot ROB15,16.

GPS Point(s) Y Yes___No___ Latitude 42.10032 Longitude -72.67955

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): This dominant canopy tree is silver maple (Acer saccharinum), however sycamore (Platanus occidentalis) and basswood (Tilia americana) occur in the area and in one plot were emergents. Except for small silver maples, shrubs were almost absent. The herbaceous layer was patchy and included Ostrich Fern (Matteuccia struthiopteris) and Wood Nettle (Laportea canadensis). The soil surface was sand.

Estimated size (acres) GIS Acres (if available) **2**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): The community occurs on depositional areas near a bend in the Westfield River. The floodplain is relatively narrow but has channels where the river runs through when in flood. Trees tend to occur in lines along higher, sandy ridges. Flooding probably occurs annually. The immediate riverbank is used for fishing.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): This is a naturally disturbed area. Invasive plants are present. It would be worthwhile to remove the Japanese Knotweed (Polygonum (=Fallopia) cuspidatum) from the floodplain areas. At the present the populations of this species are not extensive and could be controlled. A secondary goal would be to remove garlic mustard (Allaria petiolata), but this species is more widespread in the park and would be harder to keep out of the floodplain areas.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Fishing and informal camps..

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site):

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): The areas sampled are the largest areas of this community in the park. The actual area of this community was not measured.

Owner's Name (if known): DCR, Telephone: (__)

Address:

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site):

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: The floodplain is not as extensive as other areas I've seen.

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: At present invasives could be controlled...

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: The areas are discontinuous.. [Overall rank is for the park.]

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned):

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): MAJOR-RIVER FLOODPLAIN FOREST
2. GPS Point: ROB15
3. Assigned Type: MAJOR-RIVER FLOODPLAIN FOREST
5. Site name: Robinson SP
4. Lat.: 42.10032 Lon.: -72.67955
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Plot is in the western part of Robinson SP, at the confluence of the Westfield River and the stream in May Hollow.

11. Survey Date: 6/15/2007 Previous Observations:
12. Surveyer: Lena Fletcher Other surveyers: Kristina Ferrare

B. Environmental Description

14. Plot #: ROB15 Image Annot #: Elevation: 100 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical: Linear
Horizontal: Linear

19. Slope aspect: 78 degrees

22. Downed
Max. Diameter (in): 13
Max. Length (ft): 26
Decay Class: B
Mean Diameter (in): 5
CoverClass: 2

25. Dom. Unvegetated: Bare Soil
26. Litter Depth: 0 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Sand
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Betula lenta 20	26.5	

31. Land Use Sign
Multi-trunked Trees

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
Plot is split and by periodically inundated by deeply incised ephemeral channel currently filled with downed wood.
Garlic mustard, bittersweet Japanese knotweed present.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB15
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: floodplain
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	4
T3	NA	3
S1	NA	1
S2	NA	+
H	NA	2

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Tilia americana var. ?*	2	70.7,63.6 cm
T1	*Platanus occidentalis*	1	29.2,31.7 cm
T2	*Acer saccharinum*	4	39.3,42.3,34.3,38.5,32.5,23.0,31.9,20.8 cm
T3	*Acer saccharinum*	3	10.2,16.1,12.3,21.2,54.1,19.6,20.9,13.9 cm
T3	*Ulmus rubra*	2	14.2,11.9,15.2,23.6,14.9,15.8 cm
	Shrub		
S1	*Acer negundo*	+	
S1	*Acer saccharinum*	+	
S1	*Euonymus alata*	+	
S1	*Euonymus europaea*	+	
S1	*Lindera benzoin*	+	
S2	*Acer saccharinum*	+	
S2	*Euonymus alata*	+	
S2	*Fraxinus americana*	+	
	Herb/Graminoid		
H	*Alliaria petiolata*	1	
H	*Celastrus orbiculata*	1	
H	*Grass, unidentified NA*	1	
H	*Laportea canadensis*	1	
H	*Polygonum cuspidatum*	1	
H	*Arisaema triphyllum*	+	
H	*Circaea lutetiana ssp. canadensis*	+	
H	*Eupatorium sp. (cf. maculatum)*	+	
H	*Impatiens sp.*	+	
H	*Lilium canadense*	+	
H	*Matteuccia struthiopteris*	+	
H	*Oxalis sp.*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Polygonum sp.*	+	
H	*Uvularia sp.*	+	
H	*Viola sp.*	+	

Surveyed By: Lena Fletcher 6/15/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): MAJOR-RIVER FLOODPLAIN FOREST
2. GPS Point: ROB16
3. Assigned Type: MAJOR-RIVER FLOODPLAIN FOREST
5. Site name: Robinson SP
4. Lat.: 42.10658 Lon.: -72.68349
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In the western part of Robinson SP, along the side of the Westfield River at a major bend in the river (from N/S to E/W..

11. Survey Date: 6/15/2007 Previous Observations:
12. Surveyer: Lena Fletcher Other surveyers: Kristina Ferrare

B. Environmental Description

14. Plot #: ROB16 Image Annot #: Elevation: 100 Meters

17. Topographic Position: Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope

Vertical:
Horizontal: Linear

19. Slope aspect: 39 degrees

22. Downed

Max. Diameter (in): 5
Max. Length (ft): 10
Decay Class: A
Mean Diameter (in): 4
CoverClass: +

23. Fuel Load: Low

25. Dom. Unvegetated: Sand
26. Litter Depth: 0 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Sand
30. NRCS Soil

24. Snags

Species	DBH	#Logs
Acer	13.2	
Acer	12.5	
Acer	11.5	
Acer	12.5	

31. Land Use Sign

none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

The topography undulates with higher and lower areas, more fern in higher areas, fairly homogeneous
Invasives: multiflora rose, Japanese barberry, Oriental Bittersweet, Japanese Knotweed, Garlic Mustard

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB16
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: MH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	4
T2	NA	4
T3	NA	3
S1	NA	1
S2	NA	1
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Tilia americana var. ?*	4	75.3,54.9,64.2,46.4,86.2 cm
T2	*Acer saccharinum*	4	33.1,26.8,39.0,23.3,23.3,24.7,35.2,36.3,46.5,46.9,40.9,45.3 cm
T3	*Acer saccharinum*	3	19.7,21.5,14.2,16.3,15.7,16.2,22.8,12.3,16.2,14.9,17.5,14.2 cm
T3	*Tilia americana var. ?*	1	28.3 cm
	Shrub		
S1	*Acer negundo*	+	
S1	*Acer saccharinum*	+	
S1	*Celastrus orbiculata*	+	
S1	*Euonymus alata*	+	
S1	*Parthenocissus quinquefolia*	+	
S2	*Celastrus orbiculata*	1	
S2	*Acer negundo*	+	
S2	*Acer saccharinum*	+	
S2	*Berberis thunbergii*	+	
S2	*Carya cordiformis*	+	
S2	*Cornus sp.*	+	
S2	*Euonymus alata*	+	
S2	*Rosa multiflora*	+	
	Herb/Graminoid		
H	*Matteuccia struthiopteris*	2	
H	*Alliaria petiolata*	1	
H	*Parthenocissus quinquefolia*	1	
H	*Arisaema triphyllum*	+	
H	*Bidens sp. (cf frondosa)*	+	
H	*Cardamine impatiens*	+	
H	*Circaea lutetiana ssp. canadensis*	+	
H	*Cryptotaenia canadensis*	+	
H	*Echinocystis lobata*	+	
H	*Eupatorium sp. (rugosum given?)*	+	
H	*Glechoma hederacea*	+	
H	*Helianthus sp. (tuberosus/decapetalus)*	+	
H	*Onoclea sensibilis*	+	
H	*Oxalis sp.*	+	
H	*Poa alsodes*	+	
H	*Polygonum sp.*	+	
H	*Viola sp.*	+	

Surveyed By: Lena Fletcher 6/15/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Riverine Island Floodplain Forest (subtype association of Major River Floodplin Forest) (S2)

NatureServe Association Name (Optional):

Survey Date: 6/22/2007 Today's Date: 1/23/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Karen Searcy, Sydne Record, and Lena Fletcher

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-27 PCS Town Name: Agawam

Directions to site: Robinson State Park, plot ROB27.

GPS Point(s) Y Yes ___ No ___ Latitude 42.09833 Longitude -72.64449

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): This community has a relatively low canopy of widely spaced silver maple (Acer saccharinum). Other small trees or shrubs present include Speckled Alder (Alnus incana var. rugosa) and willow species (Salix spp.) The herbaceous layer was dense and dominated by Ostrich Fern (Matteuccia struthiopteris) and to a lesser extent, Sensitive Fern (Onoclea sensibilis). The unvegetated soil surface was sand, and the soil was dry.

Estimated size (acres) GIS Acres (if available) **1**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): The community is located on a low island between the Westfield River and an unnamed tributary. The tip of the island where we sampled is regularly flooded. It is possible that the tip of the adjacent larger island in the middle of the Westfield River also supports this community. Parts of this island had a semi-permanent camp.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): This area is naturally disturbed. It is also a pretty spot and is visited regularly and even supports a semi-permanent campsite. Invasive plants are present. I recommend removing the Japanese Barberry (Berberis thunbergii) from the floodplain areas. There is so much Oriental Bittersweet (Celastrus orbiculata) that it would be difficult to remove.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Fishing and camps.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): It would be worth checking for this community on the adjacent island in the Westfield. Our impression was that the tip of the big 'Westfield" island was rocky, although it had silver maple had quite a different type of understory. The water was too high to sample the day we visited that area..

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: I have not seen other examples of this community. _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Many invasives. [Overall rank is for the park.] _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): _____

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed):
2. GPS Point: ROB27
3. Assigned Type: MAJOR-RIVER FLOODPLAIN FOREST
5. Site name: Robinson SP
4. Lat.: 42.09833 Lon.: -72.64449
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: The plot is on the south side of the island on the eastern end of Robinson State Park.

11. Survey Date: 6/22/2007
Previous Observations:
12. Surveyer: Sydne Record
Other surveyers: Karen Searcy, Lena Fletcher

B. Environmental Description

14. Plot #: ROB27
Image Annot #:
Elevation: 68 Feet

17. Topographic Position:
Channel Bed

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Convex

19. Slope aspect: degrees

22. Downed
Max. Diameter (in): 12
Max. Length (ft): 19
Decay Class: B
Mean Diameter (in): 10
CoverClass: +

25. Dom. Unvegetated: Sand
26. Litter Depth: 0 cm
27. Parent Material:

28. Moisture Regime: Dry
29. Soil type: Sand
30. NRCS Soil

23. Fuel Load: Low

31. Land Use Sign
debris

32. Evidence of Disturbance Type **Evidence**
none

Comments:
Riverine Island floodplain forest - subtype of Major River floodplain forest. site dry but periodically inundated.
Recent human disturbance just outside of plot (abandoned cars, campfires). Plot fairly homogeneous.
Invasives present: Rosa multiflora, Celastrus orbiculata, Euonymus alata, Berberis thunbergii.
Just outside of plot, Sycamore, Black locust and green ash.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB27
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: ws1
40. Field Observed CovType: MXsw

41. Strata/life forms

Stratum	Height	Cover Class
T3	NA	3
S1	NA	+
S2	NA	1
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T3	*Acer saccharinum*	3	29.9,18.8,21.0,19.2,12.5,17.5,11.9 cm
	Shrub		
S1	*Alnus incana ssp. rugosa*	+	
S1	*Cornus amomum ssp. ?*	+	
S1	*Rosa multiflora*	+	
S1	*Salix sp.*	+	
S2	*Rosa multiflora*	1	
S2	*Alnus incana ssp. rugosa*	+	
S2	*Berberis thunbergii*	+	
S2	*Cornus sp.*	+	
S2	*Euonymus alata*	+	
	Herb/Graminoid		
H	*Matteuccia struthiopteris*	4	
H	*Onoclea sensibilis*	2	
H	*Allium sp.*	+	
H	*Amphicarpaea bracteata*	+	
H	*Apios americana*	+	
H	*Aster divaricatus*	+	
H	*Athyrium filix-femina var. ?*	+	
H	*Bidens sp.*	+	
H	*Carex crinita*	+	
H	*Carex sprengelii*	+	
H	*Dichanthelium commutatum*	+	
H	*Equisetum arvense*	+	
H	*Eupatorium maculatum*	+	
H	*Galium sp.*	+	
H	*Helianthus sp. (cf. tuberosus)*	+	
H	*Iris versicolor*	+	
H	*Lilium canadense*	+	
H	*Lycopus sp.*	+	
H	*Lysimachia ciliata*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Osmorhiza longistylis*	+	
H	*Phalaris arundinacea*	+	
H	*Poa alsodes*	+	
H	*Polygonatum pubescens*	+	
H	*Polygonum virginianum*	+	
H	*Solidago rugosa ssp. rugosa var. ?*	+	
H	*Thalictrum sp.*	+	
H	*Uvularia sessilifolia*	+	
H	*Viola sp.*	+	

Surveyed By: Sydne Record 6/22/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Oak Tulip tree Forest (S?) Variant of Red Oak-Sugar Maple transition forest

NatureServe Association Name (Optional): _____

Survey Date: 6/6/2007, 6/7/07 Today's Date: 1/16/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Karen Searcy, Sydne Record, Kristina Ferrare and Lena Fletcher.

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 08-02-26 PCS Town Name: Agawam

Directions to site: Robinson State Park, scattered sites, Plot ROB1-5, eastern part of the park..

GPS Point(s) Y Yes___No___ Latitude 42.08607 Longitude -72.65760 and other areas

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): The dominant trees were Red Oak (Quercus rubra) and Tulip Tree (Liriodendron tulipifera). Red Maple (Acer rubrum), Black Birch (Betula lenta), and Sugar Maple (A. saccharum) were common in the lower canopy layers. Witch Hazel (Hamamelis virginiana) and Maple-leaved Viburnum (Viburnum acerifolium) were the most common shrubs, and the herbaceous layer was rich. Trees, particularly Tulip Trees, were tall and typically present in both the canopy and canopy emergent layers. The community was found from about upper mid slope to the bottom of 3 ravines in lake-bottom deposits or unassigned glacial till. The soil was typically fine sandy loam or loamy sand. The areas were moist and typically well drained. Soil surfaces were covered by leaf litter. The community is not continuous within the ravines.

Estimated size (acres) GIS Acres (if available) **20**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): The area surrounding the ravines in which the community occurs is relatively flat deltaic deposits and terrace deposits above the Westfield River. Most of the flat areas is covered with a Mixed Oak Forest. Land use is recreation. The ravines have streams and wet areas at their base that support wetland vegetation. At least two of the ravines have seeps in the headwater regions. The Oak-Tulip Tree Forest is impressive because of the height and diameter of the trees. Aside from informal trails there is no evidence of disturbance. Some invasive plants are present, but are not common.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): Anthropogenic disturbances are minimal. The community seems stable. An age-structure inventory of tulip trees in the ravines would be useful to determine if this community were regenerating.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Most of the areas have walking and biking trails,. r.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): _____
This community was sampled with 5 releve plots.The actual extent of the community within each ravine was not determined, the attached map is a rough estimate only.

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? _Y_yes no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** – Poor **Ranked within the park**

Comments: I have not seen other examples of this community, making it hard to compare. _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: The two largest areas of this community are likely regenerating. Tulip tree dominated areas are patchy within the ravines. _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Area in a suburban/urban setting. _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): Some invasives present. Ranks are for the Park.

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): Rich Oak
2. GPS Point: ROB1
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.08607 Lon.: -72.6576
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name: WEST SPRINGFIELD
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In Robinson State Park, the plot is east of the central part of the park towards the top of a ravine that goes steeply down to the Westfield.

11. Survey Date: 6/6/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Sydne Record, Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: Rob1
Image Annot #:
Elevation: 148 Feet

17. Topographic Position:
Step in Slope

18. Topographic sketch

20. Slope Class: Gentle

21. Slope
Vertical: Convex
Horizontal: Convex

19. Slope aspect: 180 degrees

22. Downed
Max. Diameter (in): 17
Max. Length (ft): 20
Decay Class: B
Mean Diameter (in): 5
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 1.5 in
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Oak, 20 ft.	14 cm	
unknown, 40 ft.	35 cm	

31. Land Use Sign
trail

Comments:

Slope class gentle to rather steep.
The plot is relatively homogeneous, no invasive species.
Soil - fine sandy loam.
Swain assigned to Red Oak - Sugar Maple Transition forest 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB1
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T2	NA	4
T3	NA	3
S1	NA	3
S2	NA	3
H	NA	2

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T2	*Liriodendron tulipifera*	3	85.8 cm
T2	*Quercus alba*	3	56.7,49.8,42.7 cm
T2	*Betula papyrifera*	1	25.7 cm
T3	*Betula lenta*	3	13,20.2 cm
	Shrub		
S1	*Acer rubrum var. ?*	3	
S1	*Acer saccharum*	1	
S1	*Betula lenta*	1	
S1	*Carpinus caroliniana*	1	
S1	*Hamamelis virginiana*	1	
S1	*Liriodendron tulipifera*	1	
S1	*Amelanchier sp.*	+	
S1	*Crataegus sp.*	+	
S2	*Viburnum acerifolium*	1	
S2	*Acer rubrum var. ?*	+	
S2	*Acer saccharum*	+	
S2	*Betula lenta*	+	
S2	*Fagus grandifolia*	+	
S2	*Fraxinus sp.*	+	
S2	*Kalmia latifolia*	+	
S2	*Liriodendron tulipifera*	+	
S2	*Prunus serotina*	+	
S2	*Vaccinium pallidum*	+	
	Herb/Graminoid		
H	*Arisaema triphyllum*	+	
H	*Carex sp.*	+	
H	*Chimaphila maculata*	+	
H	*Dennstaedtia punctilobula*	+	
H	*Gaultheria procumbens*	+	
H	*Lycopodium obscurum*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Medeola virginiana*	+	
H	*Mitchella repens*	+	
H	*Thelypteris noveboracensis*	+	

Surveyed By: Karen Searcy 6/6/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): MIXED OAK FOREST
2. GPS Point: ROB2
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.08632 Lon.: -72.65938
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Robinson SP, ravine north and east of the headquarters, towards river.

11. Survey Date: 6/6/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Sydne Record, Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: ROB2
Image Annot #:
Elevation: 141 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical: Concave
Horizontal:

19. Slope aspect: 180 degrees

22. Downed
Max. Diameter (in): 12
Max. Length (ft): 50
Decay Class: B
Mean Diameter (in): 10
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 2 in
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type:
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Acer rubrum	20 cm	

31. Land Use Sign
trail

Comments:
Tulip tree area, relatively homogeneous. Slope is flat to moderate.
Swain assigned to Red Oak - Sugar Maple Transition forest 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB2
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	3
T3	NA	1
S1	NA	2
S2	NA	1
H	NA	4

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Liriodendron tulipifera*	2	48.3,42.7 cm
T1	*Quercus rubra var. ?*	2	79 cm
T2	*Acer saccharum*	2	11.7,26.3 cm
T2	*Liriodendron tulipifera*	2	16.7,44.8,73.8 cm
T2	*Quercus rubra var. ?*	2	68.1 cm
T2	*Fraxinus americana*	1	31.5 cm
T3	*Tsuga canadensis*	2	21.8 cm
T3	*Betula lenta*	1	8 cm
	Shrub		
S1	*Hamamelis virginiana*	3	
S1	*Acer saccharum*	1	
S1	*Betula lenta*	1	
S1	*Carpinus caroliniana*	1	
S2	*Amelanchier sp.*	1	
S2	*Castanea dentata*	1	
S2	*Cornus alternifolia*	1	
S2	*Corylus sp.*	1	
S2	*Hamamelis virginiana*	1	
S2	*Viburnum acerifolium*	1	
S2	*Carya sp.*	+	
	Herb/Graminoid		
H	*Osmunda cinnamomea*	2	
H	*Osmunda claytoniana*	2	
H	*Dennstaedtia punctilobula*	1	
H	*Polystichum acrostichoides*	1	
H	*Anemone quinquefolia*	+	
H	*Aralia nudicaulis*	+	
H	*Arisaema triphyllum*	+	
H	*Athyrium filix-femina var. ?*	+	
H	*Dentaria diphylla*	+	
H	*Lycopodium obscurum*	+	
H	*Maianthemum racemosum*	+	
H	*Onoclea sensibilis*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Poa alsodes*	+	
H	*Prenanthes altissima*	+	
H	*Ranunculus recurvatus*	+	
H	*Smilax herbacea*	+	
H	*Solidago flexicaulis*	+	
H	*Symplocarpus foetidus*	+	
H	*Veratrum viride*	+	

Surveyed By: Karen Searcy 6/6/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): MIXED OAK FOREST
2. GPS Point: ROB3
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.09357 Lon.: -72.65255
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Tulip 3. Robinson SP. In a ravine north of houses, north of the intersection between Maynard St. and Duclos Dr.

11. Survey Date: 6/7/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: ROB3
Image Annot #:
Elevation: 144 Feet

17. Topographic Position:
Mid Slope

18. Topographic sketch

20. Slope Class: Moderate

21. Slope
Vertical: Convex
Horizontal: Concave

19. Slope aspect: 276 degrees

22. Downed
Max. Diameter (in): 10
Max. Length (ft): 4
Decay Class: B
Mean Diameter (in): 6
CoverClass: 2

25. Dom. Unvegetated: Litter
26. Litter Depth: 5 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: 1

24. Snags

Species	DBH	#Logs
oak, 2 m	28.5	
tulip poplar 70 ft	58.3	

31. Land Use Sign
old road

Comments:
drier side slope down to seepy toe slope, down to a wetland, base is periodically inundated. Soil sandy loam.
Small Japanese bittersweet noted in herbaceous layer.
Site called Tulip 3, plot 4 nearby.
Herbaceous layer is primarily at the wetter bottom of the plot.
Swain assigned to Red Oak - Sugar Maple Transition forest 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB3
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	4
T3	NA	2
S1	NA	4
S2	NA	1
H	NA	3

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Liriodendron tulipifera*	2	64.7 cm
T1	*Quercus rubra var. ?*	2	66.7 cm
T2	*Liriodendron tulipifera*	4	53.3,37.7,25.3,50.6 cm
T2	*Acer rubrum var. ?*	2	35.0,57.3 cm
T2	*Quercus rubra var. ?*	2	52.8 cm
T3	*Acer rubrum var. ?*	1	13.4 cm
T3	*Betula alleghaniensis*	1	18 cm
T3	*Betula lenta*	1	17.5 cm
T3	*Nyssa sylvatica*	1	15.3 cm
	Shrub		
S1	*Hamamelis virginiana*	4	
S1	*Betula lenta*	1	
S1	*Fagus grandifolia*	1	
S2	*Acer pensylvanicum*	1	
S2	*Acer rubrum var. ?*	1	
S2	*Acer saccharum*	1	
S2	*Corylus americana*	1	
S2	*Hamamelis virginiana*	1	
S2	*Ilex verticillata*	1	
S2	*Kalmia latifolia*	1	
S2	*Pinus strobus*	1	
S2	*Quercus rubra var. ?*	1	
S2	*Viburnum acerifolium*	1	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	1	
H	*Aralia nudicaulis*	+	
H	*Aralia racemosa*	+	
H	*Arisaema triphyllum*	+	
H	*Aster divaricatus*	+	
H	*Carex spp.*	+	
H	*Celastrus orbiculata*	+	
H	*Dentaria sp.*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Medeola virginiana*	+	
H	*Osmunda cinnamomea*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Poa alsodes*	+	
H	*Polygonatum pubescens*	+	
H	*Solidago caesia*	+	
H	*Thelypteris noveboracensis*	+	
H	*Uvularia sessilifolia*	+	

Surveyed By: Karen Searcy 6/7/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): MIXED OAK FOREST
2. GPS Point: ROB4
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.093887 Lon.: -72.65277
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Tulip 4. Robinson SP. In a ravine north of houses, north of the intersection between Maynard St. and Duclos Dr.

11. Survey Date: 6/7/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: ROB4
Image Annot #:
Elevation: 171 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical: Concave
Horizontal: Concave

19. Slope aspect: degrees

22. Downed
Max. Diameter (in): 11
Max. Length (ft): 81
Decay Class: A
Mean Diameter (in): 7
CoverClass: 2

25. Dom. Unvegetated: Litter
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Acer rubrum 30	35 cm	
Acer rubrum 20	27.1	
Acer rubrum 45	36 cm	
Betula lenta 7	13.9	
B. lenta 12 ft	10.2	

31. Land Use Sign
Multi-trunked Trees

Comments:
Moist to wet, hummocky, periodically inundated mid area, permanently inundated lowest areas, stream, hummocks never inundated.
Trees are located on hummocks, basin bottom is wetland with stream
Invasive, Celastrus orbiculata, Oriental bittersweet
an unidentified orchid in plot. Swain assigned to Red Oak - Sugar Maple Transition forest 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB4
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	3
T3	NA	1
S1	NA	3
S2	NA	1
H	NA	4

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Liriodendron tulipifera*	3	80.4,59.2,55.8,54.8 cm
T2	*Quercus rubra var. ?*	3	46,61.2,35.5,40 cm
T2	*Acer rubrum var. ?*	2	25.5,32.3,33.0,33.8 cm
T2	*Liriodendron tulipifera*	2	28.0,31.3,33.0,33.8 cm
T3	*Betula alleghaniensis*	1	16.9 cm
T3	*Betula lenta*	1	17.5 cm
	Shrub		
S1	*Hamamelis virginiana*	3	
S1	*Lindera benzoin*	2	
S1	*Vaccinium corymbosum*	+	
S2	*Fraxinus americana*	+	
S2	*Lindera benzoin*	+	
S2	*Liriodendron tulipifera*	+	
S2	*Viburnum acerifolium*	+	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	3	
H	*Osmunda cinnamomea*	2	
H	*Anemone quinquefolia*	+	
H	*Arisaema triphyllum*	+	
H	*Chelone glabra var. ?*	+	
H	*Dryopteris goldiana*	+	
H	*Dryopteris intermedia*	+	
H	*Glyceria melicaria*	+	
H	*Graminoid species NA*	+	
H	*Hydrocotyle americana*	+	
H	*Impatiens capensis*	+	
H	*Lycopodium obscurum*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Medeola virginiana*	+	
H	*Osmunda regalis var. spectabilis*	+	
H	*Prenanthes altissima*	+	
H	*Ranunculus recurvatus*	+	
H	*Rhododendron sp.*	+	
H	*Rubus hispidus*	+	
H	*Thelypteris noveboracensis*	+	
H	*Trientalis borealis*	+	
H	*Uvularia sp.*	+	

Surveyed By: Karen Searcy 6/7/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed):
2. GPS Point: ROB5
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.09602 Lon.: -72.64116
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Plot is in the east end of Robinson SP, about 290 ft east of the powerline and 220 NW of the end of George St.

11. Survey Date: 6/7/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: ROB5
Image Annot #:
Elevation: 170 Feet

17. Topographic Position:
Step in Slope

18. Topographic sketch

20. Slope Class: Rather Steep

21. Slope
Vertical: Convex
Horizontal: Concave

19. Slope aspect: 345 degrees

22. Downed
Max. Diameter (in): 10
Max. Length (ft): 60
Decay Class: B
Mean Diameter (in): 8
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 5 in
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type:
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Betula	30.7	

31. Land Use Sign
lawn clippings and trash

32. Evidence of

Disturbance Type	Evidence

Comments:
Unvegetated surface includes seepy areas.
Oriental Bittersweet, Norway Maple and Winged Euonymus present. The bottom of the plot is in a stream, permanently inundated, above that it is moist. Litter depth is variable, 0-5 inches. No sphagnum.
Cover type given as OM: Swain assigned community as Red Oak-Sugar Maple Transition based on apparent moderate richness, esp of the understory.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB5
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: NH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	2
T3	NA	3
S1	NA	3
S2	NA	1
H	NA	2

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Liriodendron tulipifera*	2	95.8, 92.0 cm
T2	*Betula lenta*	2	37.7 cm
T3	*Acer saccharum*	3	12.5,38.1,19.9 cm
T3	*Acer rubrum var. ?*	1	16.1 cm
T3	*Fraxinus americana*	1	18.5 cm
	Shrub		
S1	*Acer saccharum*	3	
S1	*Hamamelis virginiana*	3	
S1	*Acer pensylvanicum*	1	
S1	*Fagus grandifolia*	1	
S1	*Acer saccharum*	+	
S2	*Acer pensylvanicum*	1	
S2	*Hamamelis virginiana*	1	
S2	*Acer saccharum*	+	
S2	*Euonymus alata*	+	
S2	*Quercus rubra var. ?*	+	
	Herb/Graminoid		
H	*Actaea sp.*	1	
H	*Athyrium filix-femina var. ?*	1	
H	*Maianthemum racemosum*	1	
H	*Symplocarpus foetidus*	1	
H	*Arisaema triphyllum*	+	
H	*Aster divaricatus*	+	
H	*Celastrus orbiculata*	+	
H	*Circaea lutetiana ssp. canadensis*	+	
H	*Equisetum hyemale var. affine*	+	
H	*Impatiens sp.*	+	
H	*Osmunda claytoniana*	+	
H	*Polygonatum pubescens*	+	
H	*Polystichum acrostichoides*	+	
H	*Thelypteris noveboracensis*	+	

Surveyed By: Karen Searcy 6/7/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): OAK - HEMLOCK - WHITE PINE FOREST
2. GPS Point: no
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.09633561 Lon.: -72.6408098
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In Robinson SP hike on trails to east end of park. Community occurrence is on NW facing slope, east of power lines and north of adjacent houses.

11. Survey Date: 5/25/2001 Previous Observations:
12. Surveyer: Nancy J. Putnam Other surveyers: Karen Hirschberg

B. Environmental Description

14. Plot #: ROBLirio1
Image Annot #:
Elevation: 150 Feet

17. Topographic Position:
Mid Slope

18. Topographic sketch

20. Slope Class: Moderate

21. Slope
Vertical:
Horizontal:

19. Slope aspect: 315 degrees

22. Downed
Max. Diameter (in):
Max. Length (ft):
Decay Class:
Mean Diameter (in):
CoverClass:

25. Dom. Unvegetated:
26. Litter Depth: NA
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type:
30. NRCS Soil

23. Fuel Load:

Comments:

Form 2 for NHESP filled out, to be entered into Biotics by P. Swain when draft polygon entered into Mapper. Lat and Long from centroid of polygon drawn by Swain for ravine 10 12 07. Putnam notes: Adjacent houses have been dumping landscaping debris over the top of the slope. Invasive species from residential area are a threat, but at this point could be removed. Recommend that dumped materials be removed along with invasives and that a fence be installed along the park boundary.
Swain assigned to Red Oak - Sugar Maple Transition forest 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: 1
36. Plot Size: 45 x 50 ft
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T2	NA	5
S1	NA	3
H	NA	2

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T2	*Liriodendron tulipifera*	4	22", 42", 44" in
T2	*Fraxinus americana*	3	
T2	*Quercus rubra var. ?*	3	8" in
T2	*Betula lenta*	2	
T2	*Acer rubrum var. ?*	1	
T2	*Acer saccharum*	1	
T2	*Betula alleghaniensis*	1	
	Shrub		
S1	*Hamamelis virginiana*	3	
S1	*Acer pensylvanicum*	2	
S1	*Acer saccharum*	1	
S1	*Carpinus caroliniana*	1	
S1	*Euonymus alata*	+	
	Herb/Graminoid		
H	*Actaea pachypoda*	2	
H	*Polystichum acrostichoides*	2	
H	*Acer pensylvanicum*	1	
H	*Arisaema triphyllum*	1	
H	*Athyrium filix-femina var. ?*	1	
H	*Maianthemum racemosum*	1	
H	*Polygonatum pubescens*	1	
H	*Thelypteris noveboracensis*	1	
H	*Acer saccharum*	+	
H	*Aster sp.*	+	
H	*Equisetum hyemale var. affine*	+	
H	*Euonymus alata*	+	
H	*Impatiens sp.*	+	
H	*Liriodendron tulipifera*	+	
H	*Osmunda cinnamomea*	+	
H	*Prenanthes sp.*	+	
H	*Trillium erectum*	+	
H	*Viburnum acerifolium*	+	

Surveyed By: Nancy J. Putnam 5/25/2001

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Rich Mesic Forest (S3)

NatureServe Association Name (Optional):

Survey Date: 6/14/2007 Today's Date: 1/22/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Sydne Record and Lena Fletcher.

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 08-02-26 PCS Town Name: Agawam

Directions to site: Robinson State Park, Plot ROB10.

GPS Point(s) Y Yes___No___ Latitude 42.10045 Longitude -72.68261 and others

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): The canopy is dominated by Sugar Maple (Acer saccharum) White Ash (Fraxinus americana), and Black Birch (Betula lenta). Other trees commonly found in RMF such as Bitternut Hickory (Carya cordiformis) and Yellow Birch (B. alleghaniensis) are also present. This stand is relatively moist and includes seepy areas with skunk cabbage (Symplocarpus foetidus) and shrubs typical of wetlands such as spice bush (Lindera benzoin). The spring flora is rich and includes many species typical of RMF including cut-leaved toothwort (Dentaria diphylla), wild leek (Allium tricoccum), and Dutchman's Breeches (Dicentra cucullaria). The tree canopy is three layered with the dominants present in all layers. The major hydrological process is seepage. Swales in the area have water in the early spring.

Estimated size (acres) GIS Acres (if available) **6.4 ac**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities):The area of RMF is within the 100 year floodplain. It occurs in alluvium at the base of a steep bank of lake sediment deposition. It is within an obvious meander scar and includes a large seep area and several intermittent streams. The park road is at the northern edge. It includes a raised levee type area that might not be natural. It is crossed by a maintained utility corridor. The seep area is relatively open as the result of fallen trees, and includes a variety of shrubs and herbaceous plants. This is a park-like area with relatively few shrubs and a rich spring flora. Just east along the road is one of the most heavily invaded areas in the park..

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): At present this area is not heavily invaded. I would suggest removal of exotics and periodic monitoring to make sure they stay out. Plants to remove include Japanese Barberry (Berberis thunbergii) and Winged Euonymus (Euonymus alata). Plants to watch for include Spindle Tree (Euonymus europea) which has invaded nearby areas.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
None

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): We sampled this area more intensely than originally intended. This area does not need more work. The exact boundaries were not determined.

Owner's Name (if known): DCR, _____ Telephone: (__)

Address: _____

Is Owner: aware of community? __yes _ no _unknown; Protecting community? _Y_yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** – Poor

Comments: this area has fewer ferns than some RMF that I have seen.

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Area in a suburban/urban setting.

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): I think this is a nice example of a Rich Mesic forest that can be protected.

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RICH, MESIC FOREST COMMUNITY
2. GPS Point: ROB10
3. Assigned Type: RICH, MESIC FOREST COMMUNITY
5. Site name: Robinson SP
4. Lat.: 42.10045 Lon.: -72.68261
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Plot 10 is towards the western end of Robinson SP, about 0.2mi west of the western end of the island in the river, about 200 ft west of the road. It is about 375 ft south of the pipeline ROW. It is at the base of a slope, near a certifiable vernal pool (pool 4).
11. Survey Date: 6/14/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB10
Image Annot #:
Elevation: 115 Feet

17. Topographic Position:
Step in Slope

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Concave

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 11
Max. Length (ft): 65
Decay Class: A
Mean Diameter (in): 8
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
Invasive species: Japanese Barberry, Winged Euonymus, Oriental Bittersweet,

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB10
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: OH
40. Field Observed CovType: MH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	4
T3	NA	3
S1	NA	2
S2	NA	2
H	NA	4

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer saccharum*	2	49.9,49.7 cm
T1	*Betula lenta*	2	53.2 cm
T2	*Acer saccharum*	3	27.5,31.8,19.9 cm
T2	*Betula lenta*	3	43.2,54.9 cm
T2	*Acer rubrum var. ?*	2	48.9 cm
T3	*Acer saccharum*	3	
	Shrub		
S1	*Acer saccharum*	2	
S1	*Carpinus caroliniana*	1	
S1	*Cornus sp. (note says toothed opp lvs)*	+	
S2	*Acer saccharum*	2	
S2	*Lindera benzoin*	2	
S2	*Fraxinus americana*	1	
S2	*Acer rubrum var. ?*	+	
S2	*Carpinus caroliniana*	+	
S2	*Euonymus alata*	+	
S2	*Quercus rubra var. ?*	+	
S2	*Vaccinium corymbosum*	+	
	Herb/Graminoid		
H	*Athyrium filix-femina var. ?*	2	
H	*Aster divaricatus*	1	
H	*Carex sp.*	1	
H	*Thelypteris noveboracensis*	1	
H	*Arisaema triphyllum*	+	
H	*Carex bromoides*	+	
H	*Carex projecta*	+	
H	*Celastrus orbiculata*	+	
H	*Convallaria majalis*	+	
H	*Grass, unidentified NA*	+	
H	*Impatiens capensis*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Onoclea sensibilis*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Poa alsodes*	+	
H	*Polygonatum pubescens*	+	
H	*Polystichum acrostichoides*	+	
H	*Ranunculus recurvatus*	+	
H	*Solidago flexicaulis*	+	
H	*Symplocarpus foetidus*	+	
H	*Thalictrum sp. (dasycarpum given)*	+	
H	*Toxicodendron radicans*	+	
H	*Trillium erectum*	+	
H	*Unidentified NA*	+	
H	*Viola sp.*	+	

Surveyed By: Sydne Record 6/14/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): Beech birch maple
2. GPS Point: ROB11
3. Assigned Type: NORTHERN HARDWOODS - HEMLOCK - WHITE PINE FOREST
5. Site name: Robinson SP
4. Lat.: 42.10073 Lon.: -72.68285
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Point ROB11 is in the western part of Robinson Sp, west of the park road, South of the pipeline ROW, near Pt ROB10 and certifiable pool 4. It is on a flat step below a steep slope.

11. Survey Date: 6/14/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB11
Image Annot #:
Elevation: 115 Feet

17. Topographic Position:
Step in Slope

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Linear

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 10
Max. Length (ft): 60
Decay Class: A
Mean Diameter (in): 6
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
unknown, 35 ft	32 cm	
Betula sp., 40 ft	18.7	
unknown, 50 ft	24.6	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
Invasive species: Japanese Barberry, winged euonymus, Oriental bittersweet
Lower areas with more skunk cabbage

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB11
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: OH
40. Field Observed CovType: MH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	4
T3	NA	3
S1	NA	3
S2	NA	2
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer saccharum*	2	59.8 cm
T1	*Fraxinus americana*	1	63.2 cm
T2	*Acer saccharum*	3	26.8,18.9,40.0,19.9 cm
T2	*Betula lenta*	2	54.5 cm
T2	*Fraxinus americana*	1	49.2 cm
T3	*Acer saccharum*	3	17.5,10.1,12.6,13.1 cm
T3	*Fagus grandifolia*	+	
	Shrub		
S1	*Acer saccharum*	2	
S1	*Betula lenta*	1	
S1	*Carya ovalis*	1	
S1	*Ulmus rubra*	1	
S1	*Fagus grandifolia*	+	
S2	*Lindera benzoin*	2	
S2	*Acer saccharum*	+	
S2	*Berberis thunbergii*	+	
S2	*Euonymus alata*	+	
S2	*Euonymus europaea*	+	
S2	*Fraxinus americana*	+	
S2	*Viburnum acerifolium*	+	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	3	
H	*Impatiens capensis*	2	
H	*Matteuccia struthiopteris*	2	
H	*Arisaema triphyllum*	1	
H	*Athyrium filix-femina var. ?*	1	
H	*Convallaria majalis*	1	
H	*Osmunda cinnamomea*	1	
H	*Anemone quinquefolia*	+	
H	*Aster divaricatus*	+	
H	*Aster sp.*	+	
H	*Carex bromoides*	+	
H	*Carex sp.*	+	
H	*Celastrus orbiculata*	+	
H	*Erythronium americanum*	+	
H	*Festuca subverticillata*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Mitchella repens*	+	
H	*Onoclea sensibilis*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Polygonatum pubescens*	+	
H	*Polystichum acrostichoides*	+	
H	*Ranunculus abortivus*	+	
H	*Solidago flexicaulis*	+	
H	*Thalictrum sp. (dasycarpum given)*	+	
H	*Thelypteris noveboracensis*	+	
H	*Trillium erectum*	+	
H	*Unidentified NA*	+	
H	*Unidentified NA (nettle)*	+	
H	*Vaccinium pallidum*	+	
H	*Viola sp.*	+	

Surveyed By: Sydne Record 6/14/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): NORTHERN HARDWOODS - HEMLOCK - WHITE PINE
2. GPS Point: ROB12
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.09987 Lon.: -72.6822
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: the community is in the western part of Robinson State Park, west of the park road, south of points 10 and 11, near a wetland at the base of a steep slope.

11. Survey Date: 6/14/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB12
Image Annot #:
Elevation: 115 Feet

17. Topographic Position:
Step in Slope

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Convex

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 14
Max. Length (ft): 60
Decay Class: B
Mean Diameter (in): 6
CoverClass: 1

23. Fuel Load: Low

25. Dom. Unvegetated: Litter
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

24. Snags

Species	DBH	#Logs
Acer	70.2	

31. Land Use Sign
possible old rail bed berm

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
The topographic feature may be unnaturally formed bermed, old rail line?
Invasives: Oriental Bittersweet, Japanese barberry, winged euonymus, multiflora rose.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB12
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: MH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	4
T3	NA	3
S1	NA	4
S2	NA	3
H	NA	3

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer saccharum*	3	58.0,56.7 cm
T1	*Fraxinus americana*	1	39.7 cm
T2	*Acer saccharum*	4	38.1,29.3,34.9,37.6,37.3 cm
T2	*Quercus rubra var. ?*	1	46.1 cm
T3	*Acer saccharum*	3	12.0,20.9 cm
T3	*Carya cordiformis*	+	9.8 cm
T3	*Ulmus rubra*	+	15.2 cm
	Shrub		
S1	*Acer saccharum*	3	
S1	*Carpinus caroliniana*	2	
S1	*Betula lenta*	1	
S1	*Carya cordiformis*	1	
S1	*Lindera benzoin*	1	
S1	*Ulmus rubra*	1	
S2	*Lindera benzoin*	3	
S2	*Berberis thunbergii*	1	
S2	*Euonymus alata*	1	
S2	*Acer negundo*	+	
S2	*Carya cordiformis*	+	
S2	*Cornus sericea*	+	
S2	*Fagus grandifolia*	+	
S2	*Prunus serotina*	+	
S2	*Quercus rubra var. ?*	+	
S2	*Unidentified NA (horse chestnut?)*	+	
	Herb/Graminoid		
H	*Polystichum acrostichoides*	1	
H	*Sanguinaria canadensis*	1	
H	*Actaea pachypoda*	+	
H	*Arisaema triphyllum*	+	
H	*Aster divaricatus*	+	
H	*Aster puniceus var. ?*	+	
H	*Carex bromoides*	+	
H	*Carex hirtifolia*	+	
H	*Carex radiata*	+	
H	*Carex sprengelii*	+	
H	*Celastrus orbiculata*	+	
H	*Convallaria majalis*	+	
H	*Maianthemum racemosum*	+	
H	*Onoclea sensibilis*	+	
H	*Oxalis sp.*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Polygonatum pubescens*	+	
H	*Rosa multiflora*	+	
H	*Solidago flexicaulis*	+	
H	*Solidago rugosa var. ?*	+	
H	*Symplocarpus foetidus*	+	
H	*Thelypteris noveboracensis*	+	
H	*Trillium erectum*	+	
H	*Unidentified NA (nettle)*	+	
H	*Viola cucullata*	+	
H	*Viola sp.*	+	

Surveyed By: Sydne Record 6/14/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Riverine Pointbar and Beach Community (S3)
NatureServe Association Name (Optional): _____
Survey Date: 8/29/2007 Today's Date: 1/26/2008
Survey Site Name: Robinson State Park
Surveyor Name(s): Karen Searcy
Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS
Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-28 PCS Town Name: Agawam
Directions to site: Robinson State Park, sandbar near the confluences of May Hollow Brook and the Westfield River.

GPS Point(s) Y Yes___No___ Latitude 42.08979 Longitude -72.66093

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): This community occurred on a sandbar near the junction of May Hollow Brook and the Westfield River. Vegetation was patchy and was mostly open sand and gravel. Species included Green amaranth (Amaranthus hybridus)(non-native), flat-sedges (Cyperus spp.), India Love-grass (Eragrostis pilosa)(non-native), Barnyard grass (Echinochloa crus-galli)(non-native), Witch-grass (Panicum capillare), Soft-stemmed spike sedge (Eleocharis obtusa), Water-pepper (Polygonum hydropiper), Smartweed (P. pensylvanicum), and Tall crabgrass (Digitaria sanguinalis)(non-native). Water purslane (Ludwigia palustris) occurred along the wet margin toward the shore.

_____ Estimated size (acres) GIS Acres (if available) **1**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): This community was on a sandbar that emerged by late summer. The adjacent community was one of the Major River floodplain sites. The site is highly disturbed by natural flooding and changes in the water level of the Westfield River. The up-river side of the sandbar was mostly gravel while the down river side was sandy. Parts of the sandbar were underwater again in late September.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): This community is disturbed by natural flooding and changes in water level. Although it had a mix of native and non-native species, we did not see any invasive species.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
None seen.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): This community was not sampled by plot. The species list was made in late August..

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: I have no basis of comparison. _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: the community is a good match for the description in the Mass. Classification of Natural Communities.

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: [Many non native species.] _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): This community occurs as patches with a mix of native and non-native, although few invasives. _____

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Low Energy River Bank Community (S4)
NatureServe Association Name (Optional): _____
Survey Date: 7/16/2007 Today's Date: 1/25/2008
Survey Site Name: Robinson State Park
Surveyor Name(s): Karen Searcy, Sydne Record, and Lena Fletcher
Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS
Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-27 PCS Town Name: Agawam
Directions to site: Robinson State Park, plot ROB30.

GPS Point(s) Y Yes___No___ Latitude 42.08979 Longitude -72.66093

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): This community is characterized by dense populations of herbaceous plants including graminoids. Among the characteristic species were Blue Joint Grass (Calamagrostis canadensis), Reed Canary Grass (Phalaris arundinacea), Spotted Joe-Pye-weed (Eupatorium maculatum), Tall Coneflower (Rudbeckia laciniata), and Blue Monkey-flower (Mimulus ringens). Cocklebur (Xanthium strumarium) was common immediately adjacent to the Westfield River.

_____ Estimated size (acres) GIS Acres (if available) **1**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): This community occurs in small patches along the Westfield River where the bank slope is gradual. The sites seem to be flooded regularly. It is distinctive in that trees and shrubs are missing.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): This community is subject to natural disturbance. Although it had a mix of native and non-native species, we did not see any invasive species, except Reed Canary Grass. We have no management recommendations.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
None seen.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.):This communitywas sampled in mid June. I would expect more species as the season progressed at the site sampled. Species from a second site in theis community were included. The second site was observed in Late August. There are likely more areas of this community type.

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: As an example of this community within the park _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Many non native species. _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): This community occurs as patches with a mix of native and non-native, although few invasives. _____

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): LOW-ENERGY RIVERBANK
2. GPS Point: ROB30
3. Assigned Type: LOW-ENERGY RIVERBANK
5. Site name: Robinson SP
4. Lat.: 42.08979 Lon.: -72.66093
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: The plot is in the east central part of Robinson SP, on the shore of the Westfield River.

11. Survey Date: 7/16/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Sydne Record, Lena Fletcher

B. Environmental Description

14. Plot #: ROB30
Image Annot #:
Elevation: 100 Feet

17. Topographic Position:
Channel Bed

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Convex

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 0
Max. Length (ft): 0
Decay Class:
Mean Diameter (in): 0
CoverClass:

25. Dom. Unvegetated: Sand
26. Litter Depth: 0 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Sand
30. NRCS Soil

23. Fuel Load: Low

31. Land Use Sign
none

32. Evidence of Disturbance Type **Evidence**
none

Comments:
Invasive species: Phalaris arundinacea.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB30
36. Plot Size: 4x4 m
37. Leaf Phenology: Deciduous
38. Physiognomic Herbaceous
39. Photo Cover Type:
40. Field Observed CovType: NF

41. Strata/life forms

Stratum	Height	Cover Class
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Herb/Graminoid		
H	*Xanthium strumarium var. ?*	3	
H	*Phalaris arundinacea*	2	
H	*Scirpus sp. (2 species)*	2	
H	*Calamagrostis canadensis var. ?*	1	
H	*Rudbeckia laciniata var. ?*	1	
H	*Amphicarpaea bracteata*	+	
H	*Calystegia sepium var. ?*	+	
H	*Carex crinita*	+	
H	*Dichanthelium clandestinum*	+	
H	*Eleocharis sp.*	+	
H	*Eupatorium maculatum*	+	
H	*Grass, unidentified NA*	+	
H	*Impatiens capensis*	+	
H	*Juncus sp.*	+	
H	*Lindernia dubia var. ?*	+	
H	*Ludwigia palustris*	+	
H	*Lysimachia ciliata*	+	
H	*Medicago sp.*	+	
H	*Mimulus ringens*	+	
H	*Mollugo verticillata*	+	
H	*Pilea pumila*	+	
H	*Plantago major var. ?*	+	
H	*Polygonum sagittatum*	+	
H	*Polygonum sp.*	+	
H	*Polygonum sp. (cf punctatum)*	+	
H	*Rorippa sp.*	+	
H	*Rumex sp.*	+	
H	*Scutellaria sp.*	+	
H	*Trifolium repens*	+	

Surveyed By: Karen Searcy 7/16/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Mixed Oak Forest (S5)

NatureServe Association Name (Optional):

Survey Date: 6/22/2007 Today's Date: 1/16/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Searcy, Karen; Fletcher, Lena; Record, Sydne

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-26 PCS Town Name: Agawam

Directions to site: Robinson State Park, most Mixed Oak is east of the headquarters

GPS Point(s) Y Yes No Latitude 42.09352 Longitude -72.64402

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): This community is the major upland community type east of the park headquarters where it occupies the flat deltas and terrace deposits as well as the upper parts of north and north-west facing gentle slopes above the Westfield River. It is dominated by oaks, particularly red oak (Quercus rubra) and black oak (Q. velutina). Scarlet and white oak (Q. alba and Q. coccinea) are also present. Red maple (Acer rubrum) is also present in the canopy. The forest is two layered with an ericaceous shrub layer of blueberry and huckleberry (Vaccinium spp. and Gaylussacia baccata). The herbaceous layer is very sparse. The soil is dry. The shhrub layer varies a bit with some areas supporting Mountain Laurel (Kalmia latifolia), or Witch Hazel (Hamamelis virginiana) or Maple-leaved Viburnum (Viburnum acerifolium) on slightly moister sites.

Estimated size (acres) GIS Acres (if available) **87**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): This community occupies a large area and although it is surrounded by an urban/suburban area it is likely stable. It does not extend into the ravines of the west end of the park.The areas inthis community along the park fence are often used t dump garden debris and are used by ATVs.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): Disturbances include garden debris dumps, informal mountain bike trails, and some ATV use.
We noticed some garden exotics persisting in the areas near houses. Perhapsan education program about the problems of exotics could be started to help with the problem.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Trails, ATV and Mountain bike use.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site):

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.):
1 releve plot. Area on the map is only an estimate. This community with only slight variations in the understory was common at the east side of the park.

Owner's Name (if known): DCR, Telephone: (__)

Address:

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site):

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: This is a large area. [87 gis acres in 4 not very separated pieces.pcs, 2/28/08.]

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Parts, but not all, are excellent examples of this community type.

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Large area in a suburban/urban setting.

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): This is a large area with almost no exotics. Althoguh this is a common community in the state, RSP has a very good example of it.

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Note: Transcribed 2/26/2008 Swain redrew polygons based on exclusions of plantations and open areas on 2005 orthophotos. Original from Searcy. Plots ROB 4 and 28 are on the edges of the polygons.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): MIXED OAK FOREST
2. GPS Point: ROB28
3. Assigned Type: MIXED OAK FOREST
5. Site name: Robinson SP
4. Lat.: 42.09352 Lon.: -72.64402
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In Robinson SP, the plot is on the top of the slope above an unnamed stream flowing to the Westfield.

11. Survey Date: 6/22/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Karen Searcy, Lena Fletcher

B. Environmental Description

14. Plot #: ROB28 Image Annot #: Elevation: 190 Feet

17. Topographic Position: Level

18. Topographic sketch

20. Slope Class: Flat

21. Slope

Vertical:
Horizontal: Linear

19. Slope aspect: degrees

22. Downed

Max. Diameter (in): 8
Max. Length (ft): 21
Decay Class: B
Mean Diameter (in): 6
CoverClass: 1

23. Fuel Load: Low

25. Dom. Unvegetated: Litter
26. Litter Depth: 3.5 cm
27. Parent Material:

28. Moisture Regime: Dry
29. Soil type: Loam
30. NRCS Soil

24. Snags

Species	DBH	#Logs
Quercus	24.1	
Castanea	15.1	

31. Land Use Sign

none

32. Evidence of

Disturbance Type	Evidence
trail near corner	

Comments:

Plot is homogeneous
No invasives
Swain agreed with Mixed Oak forest category. 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB28
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: mixed oak
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T2	NA	4
T3	NA	2
S1	NA	3
S2	NA	3
H	NA	+

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T2	*Quercus velutina (may include hybrids)*	3	44.2,36.7,36.4,31.9,25.1,36.2,33.1 cm
T2	*Acer rubrum var. ?*	2	42.9 cm
T2	*Quercus coccinea (may include hybrid)*	2	39.7 cm
T3	*Betula lenta*	2	9.2 cm
T3	*Acer rubrum var. ?*	1	16.2 cm
T3	*Quercus rubra var. ? (may include hybrids)*	1	25.3 cm
T3	*Pinus strobus*	+	11.9 cm
	Shrub		
S1	*Castanea dentata*	2	
S1	*Quercus alba*	1	
S1	*Quercus velutina (may include hybrids)*	1	
S1	*Acer rubrum var. ?*	+	
S1	*Amelanchier sp.*	+	
S1	*Pinus strobus*	+	
S1	*Quercus rubra var. ? (may include hybrids)*	+	
S1	*Sassafras albidum*	+	
S2	*Vaccinium pallidum*	3	
S2	*Gaylussacia baccata*	2	
S2	*Sassafras albidum*	2	
S2	*Castanea dentata*	1	
S2	*Viburnum acerifolium*	1	
S2	*Acer rubrum var. ?*	+	
S2	*Pinus strobus*	+	
S2	*Prunus serotina*	+	
S2	*Quercus rubra var. ? (may include hybrids)*	+	
S2	*Quercus velutina (may include hybrids)*	+	
	Herb/Graminoid		
H	*Carex sp.*	+	
H	*Chimaphila maculata*	+	
H	*Lycopodium obscurum*	+	

Surveyed By: Sydne Record 6/22/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): OAK HICKORY FOREST
2. GPS Point: ROB17
3. Assigned Type: OAK HICKORY FOREST
5. Site name: Robinson SP
4. Lat.: 42.10237 Lon.: -72.69595
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: outside of Robinson SP, very near the Agawam Westfield line, in Westfield.

11. Survey Date: 6/18/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: ROB17 Image Annot #: Elevation: 320 Feet

17. Topographic Position: Summit/Crest

18. Topographic sketch

20. Slope Class: Moderate

21. Slope

Vertical: Concave
Horizontal: Convex

19. Slope aspect: 96 degrees

22. Downed

Max. Diameter (in): 8
Max. Length (ft): 27
Decay Class: B
Mean Diameter (in): 5
CoverClass: 1

23. Fuel Load: Low

25. Dom. Unvegetated: Litter
26. Litter Depth: 3 cm
27. Parent Material:

28. Moisture Regime: Dry
29. Soil type: Loam
30. NRCS Soil

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign

none

32. Evidence of

Disturbance Type	Evidence
Disease	adelgids

Comments:

some rocky outcrops, site fairly homogeneous.
Invasive species: small Rosa multiflora, Elaeagnus umbellata, Celastrus orbiculata.
Oak Hickory, but lots of disturbance. Pcs 3/5/2008. Not Red Oak - Sugar maple transition based on H layer.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB17
36. Plot Size: 20x20 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: CH

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	4
T3	NA	3
S1	NA	4
S2	NA	3
H	NA	2

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Quercus rubra var. ?*	3	64.3,61.4 cm
T2	*Acer saccharum*	2	23.2 cm
T2	*Quercus velutina*	2	34.9,28.0 cm
T2	*Carya glabra*	1	27.9 cm
T2	*Quercus rubra var. ?*	1	32.0 cm
T3	*Carya glabra*	2	13.4 cm
T3	*Quercus rubra var. ?*	2	15.2,16.6 cm
T3	*Betula lenta*	1	
T3	*Ostrya virginiana*	1	
T3	*Quercus velutina*	1	
T3	*Tsuga canadensis*	1	12.3 cm
T3	*Pinus strobus*	+	11.8 cm
	Shrub		
S1	*Ostrya virginiana*	3	
S1	*Carya glabra*	2	
S1	*Acer rubrum var. ?*	1	
S1	*Acer saccharum*	1	
S1	*Castanea dentata*	+	
S1	*Prunus serotina*	+	
S1	*Quercus alba*	+	
S1	*Quercus rubra var. ?*	+	
S1	*Tsuga canadensis*	+	
S2	*Viburnum acerifolium*	2	
S2	*Carya glabra*	1	
S2	*Quercus alba*	1	
S2	*Acer rubrum var. ?*	+	
S2	*Acer saccharum*	+	
S2	*Castanea dentata*	+	
S2	*Crataegus sp.*	+	
S2	*Fraxinus americana*	+	
S2	*Ostrya virginiana*	+	
S2	*Pinus strobus*	+	
S2	*Prunus serotina*	+	
S2	*Quercus rubra var. ?*	+	
S2	*Tilia americana var. ?*	+	
S2	*Tsuga canadensis*	+	
	Herb/Graminoid		
H	*Maianthemum canadense*	1	
H	*Aralia nudicaulis*	+	
H	*Aster divaricatus*	+	
H	*Aster sp.*	+	
H	*Carex debilis var. ?*	+	
H	*Celastrus sp.*	+	
H	*Chimaphila maculata*	+	
H	*Dryopteris marginalis*	+	
H	*Elaeagnus umbellata*	+	
H	*Maianthemum racemosum*	+	
H	*Mitchella repens*	+	
H	*Monotropa uniflora*	+	
H	*Polygonatum pubescens*	+	
H	*Polygonum cespitosum var. longisetum*	+	
H	*Polypodium virginianum*	+	
H	*Prenanthes trifoliolata*	+	
H	*Rosa multiflora*	+	
H	*Rubus sp.*	+	
H	*Scirpus verecundus*	+	
H	*Solidago caesia*	+	
H	*Vaccinium pallidum*	+	

Surveyed By: Sydne Record 6/18/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Red Maple Swamp

NatureServe Association Name (Optional):

Survey Date: 6/13/2007 and 6-20-2007 Today's Date: 1/23/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Karen Searcy, Sydne Record and Lena Fletcher.

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 08-02-27 PCS Town Name: Agawam

Directions to site: Robinson State Park, Plot ROB6,8,21,22,23,24 (Plots 25 and 26 are in the DEP WS1 polygon, but are called Shrub Swamp by Searcy since they were shrub dominated).

GPS Point(s) Y Yes No Latitude 42.09603 Longitude -72.64759 and others

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): The community has a canopy of Red Maple (Acer rubrum) with a sub-canopy that included a variety of other species including elm (Ulmus spp.), ash (Fraxinus americana), hickory (Carya spp.), and Swamp White Oak (Quercus bicolor). The most common shrub was Spicebush (Lindera benzoin), with high bush blueberry (Vaccinium corymbosum), and Northern Arrow-wood (Viburnum dentatum var. lucidum). Skunk cabbage (Symplocarpus foetidus) was present in all plots. Ferns such as Cinnamon Fern (Osmunda cinnamomea) and Royal Fern (O. regalis) were common. Unvegetated surfaces were typically muck or water. Many of the herbaceous plants occurred on dry hummocks.

Estimated size (acres) GIS Acres (if available) **26+ ac**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): At Robinson SP, this community occurs in shallow basins or at the bottom of swales in rolling terrain. Areas in which this community occurs show a gradient of increasing moisture. Many were supported by seepage from adjacent uplands. The wettest areas dried out by mid-summer. Large sections, but not the entire area of this community experience periodic inundation. Some areas showed hummock and hollow topography. Many plants were larger and lusher than I am used to seeing. That and species such as Spicebush suggest these wetlands may be nutrient enriched, possibly from the surrounding houses.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): The major threat to this community is from invasive plants. Common invasives are Multiflora Rose (Rosa multiflora) and Winged Euonymus (Euonymus alata).

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Some walking trails.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): Sampling was representative of the community within the park. The Red Maple Swamp community was indicated on the map of DEP wetlands from NHESP (forested wetlands). All these areas showed a gradient from very moist to wet and mucky. _____

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no _unknown; Protecting community? _Y_yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** – Poor

Comments: this area has fewer ferns than some RMF that I have seen. _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Area in a suburban/urban setting. _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): One of the best areas of this community is in the large wet area near the west end of the park, just south of the powerline..

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED MAPLE SWAMP
2. GPS Point: ROB6
3. Assigned Type: RED MAPLE SWAMP
5. Site name: Robinson SP
4. Lat.: 42.09603 Lon.: -72.64759
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Plot is in the eastern part of Robinson State Park, about 150 ft. south of the east west powerline, 400 ft west of the eastern stream.

11. Survey Date: 6/13/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Lena Fletcher, Sydne Record

B. Environmental Description

14. Plot #: ROB6
Image Annot #:
Elevation: 115 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Linear

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 16
Max. Length (ft): 60
Decay Class: A
Mean Diameter (in): 4
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: NA
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
unknown (30ft)	71.7	

Comments:

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB6
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	2
T3	NA	2
S1	NA	2
S2	NA	1
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Quercus bicolor*	2	35.3 cm
T2	*Acer rubrum var. ?*	2	18.6,26.1 cm
T2	*Prunus serotina*	1	32.2 cm
T3	*Acer rubrum var. ?*	1	11,11.8,9.5 cm
T3	*Pinus strobus*	1	10 cm
T3	*Populus grandidentata*	1	8.5 cm
	Shrub		
S1	*Amelanchier sp.*	1	
S1	*Aronia x prunifolia*	1	
S1	*Lindera benzoin*	1	
S1	*Vaccinium corymbosum*	1	
S1	*Viburnum dentatum var. ?*	1	
S2	*Aronia x prunifolia*	+	
S2	*Fagus grandifolia*	+	
S2	*Lindera benzoin*	+	
S2	*Nyssa sylvatica*	+	
S2	*Pinus strobus*	+	
S2	*Prunus serotina*	+	
S2	*Quercus rubra var. ?*	+	
S2	*Sassafras albidum*	+	
S2	*Tsuga canadensis*	+	
S2	*Vaccinium corymbosum*	+	
S2	*Viburnum acerifolium*	+	
	Herb/Graminoid		
H	*Lycopodium obscurum*	4	
H	*Osmunda cinnamomea*	4	
H	*Osmunda regalis var. spectabilis*	1	
H	*Aralia nudicaulis*	+	
H	*Gaultheria procumbens*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Symplocarpus foetidus*	+	

Surveyed By: Karen Searcy 6/13/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED MAPLE SWAMP
2. GPS Point: ROB8
3. Assigned Type: RED MAPLE SWAMP
5. Site name: Robinson SP
4. Lat.: 42.0956 Lon.: -72.64705
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: Plot is in the eastern part of Robinson State Park, about 370 ft. south of the east west powerline, 210 ft west of the eastern stream, 210 ft. SSE of Pt ROB6.

11. Survey Date: 6/13/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Lena Fletcher, Sydne Record

B. Environmental Description

14. Plot #: ROB8
Image Annot #:
Elevation: 120 Meters

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Linear

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 9
Max. Length (ft): 27
Decay Class: B
Mean Diameter (in):
CoverClass:

25. Dom. Unvegetated: Water
26. Litter Depth: 0.5 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type:
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

32. Evidence of

Disturbance Type	Evidence
deer browse	

Comments:
Invasive Rosa multiflora present, fairly homogeneous. Evidence of deer browse

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB8
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: Ssw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	3
T3	NA	1
S1	NA	1
S2	NA	1
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	3	34.8 cm
T2	*Acer rubrum var. ?*	3	28.0,19.0,17.2,14.8 cm
T3	*Acer rubrum var. ?*	1	14.8,10.6 cm
	Shrub		
S1	*Ilex verticillata*	1	
S1	*Lindera benzoin*	1	
S1	*Quercus rubra var. ?*	1	10.0 cm
S1	*Viburnum dentatum var. ?*	1	
S2	*Corylus americana*	1	
S2	*Lindera benzoin*	1	
S2	*Rosa multiflora*	1	
S2	*Viburnum dentatum var. ?*	1	
S2	*Fraxinus americana*	+	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	5	
H	*Osmunda cinnamomea*	2	
H	*Bidens sp.*	1	
H	*Chrysosplenium americanum*	1	
H	*Glyceria melicaria*	1	
H	*Impatiens capensis*	1	
H	*Anemone quinquefolia*	+	
H	*Arisaema triphyllum*	+	
H	*Athyrium filix-femina var. ?*	+	
H	*Cardamine pensylvanica*	+	
H	*Carex crinita*	+	
H	*Carex stipata*	+	
H	*Carex stricta*	+	
H	*Cryptotaenia canadensis*	+	
H	*Equisetum arvense*	+	
H	*Lysimachia ciliata*	+	
H	*Maianthemum canadense*	+	
H	*Osmunda regalis var. spectabilis*	+	
H	*Polygonum sp.*	+	
H	*Ranunculus recurvatus*	+	
H	*Scirpus sp.*	+	
H	*Scutellaria sp.*	+	
H	*Solidago sp.*	+	
H	*Viola cucullata*	+	

Surveyed By: Karen Searcy 6/13/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED MAPLE SWAMP
2. GPS Point: ROB21
3. Assigned Type: RED MAPLE SWAMP
5. Site name: Robinson SP
4. Lat.: 42.088988 Lon.: -72.67355
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In the western part of Robinson State Park, about on the southern boundary NNE of the Robin Ridge Drive and Beech Hill Rd. intersection.

11. Survey Date: 6/20/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB21 Image Annot #: Elevation: 158 Feet

17. Topographic Position: Rolling Terrain

18. Topographic sketch

20. Slope Class: Flat

21. Slope

Vertical:
Horizontal: Concave

19. Slope aspect: 0 degrees

22. Downed

Max. Diameter (in): 6
Max. Length (ft): 45
Decay Class: B
Mean Diameter (in): 4
CoverClass: 1

23. Fuel Load: 1

25. Dom. Unvegetated: Bare Soil
26. Litter Depth: 0 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

24. Snags

Species	DBH	#Logs
unknown 15 ft.	9.5 cm	

31. Land Use Sign

none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

Plot about 100m from residential area, plot homogeneous
Invasives, multiflora rose, winged euonymus
muck dominant unvegetated surface

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB21
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type:
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	1
T3	NA	3
S1	NA	3
S2	NA	2
H	NA	4

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	3	18.4,33.0,51.8 cm
T2	*Acer rubrum var. ?*	1	30.3 cm
T3	*Fraxinus americana*	2	9.8 cm
T3	*Ulmus rubra*	2	
	Shrub		
S1	*Lindera benzoin*	3	
S1	*Fraxinus americana*	1	
S1	*Ulmus rubra*	1	
S1	*Vaccinium corymbosum*	1	
S2	*Lindera benzoin*	2	
S2	*Euonymus alata*	+	
S2	*Rosa multiflora*	+	
S2	*Vaccinium corymbosum*	+	
S2	*Viburnum dentatum var. ?*	+	
	Herb/Graminoid		
H	*Impatiens sp.*	3	
H	*Symplocarpus foetidus*	3	
H	*Arisaema triphyllum*	1	
H	*Carex spp.*	1	
H	*Dryopteris cristata*	1	
H	*Maianthemum canadense*	1	
H	*Aster sp.*	+	
H	*Galium sp.*	+	
H	*Grass, unidentified NA*	+	
H	*Onoclea sensibilis*	+	
H	*Ranunculus recurvatus*	+	
H	*Scutellaria sp.*	+	
H	*Solidago rugosa var. ?*	+	
H	*Solidago sp. (smooth)*	+	
H	*Toxicodendron radicans*	+	
H	*Unidentified NA (rosaceae?)*	+	
H	*Unidentified NA (trailing)*	+	
H	*Viola cucullata*	+	

Surveyed By: Sydne Record 6/20/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED MAPLE SWAMP
2. GPS Point: ROB22
3. Assigned Type: RED MAPLE SWAMP
5. Site name: Robinson SP
4. Lat.: 42.0768 Lon.: -72.67205
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In the west central part of Robinson State Park, about 530 ft SE of point ROB21, (which is on the southern boundary NNE of the Robin Ridge Drive and Beech Hill Rd. intersection). Or, approx 750 ft west of where the park road crosses the powerline ROW.
11. Survey Date: 6/20/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB22
Image Annot #:
Elevation: 150 Feet

17. Topographic Position:
Rolling Terrain

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Concave

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 8
Max. Length (ft): 54
Decay Class: B
Mean Diameter (in): 6
CoverClass: 1

25. Dom. Unvegetated: Litter
26. Litter Depth: 3 in
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Acer saccharum	15.3 in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

Site homogeneous. Invasives present: Oriental Bittersweet, Japanese Barberry.
Sizeable slippery elms just outside of plot. Sphagnum present, but not in hummocks overhanging water.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB22
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: WS1
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T3	NA	4
S1	NA	4
S2	NA	3
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	2	36.1,29.7 cm
T3	*Fraxinus americana*	3	15.8 cm
T3	*Acer saccharum*	2	10.0 cm
T3	*Carya glabra*	2	10.6 cm
	Shrub		
S1	*Lindera benzoin*	4	
S1	*Ulmus rubra*	1	
S1	*Vaccinium corymbosum*	1	
S2	*Lindera benzoin*	3	
S2	*Berberis thunbergii*	1	
S2	*Acer rubrum var. ?*	+	
S2	*Acer saccharum*	+	
S2	*Betula lenta*	+	
S2	*Carya glabra*	+	
S2	*Celastrus orbiculata*	+	
S2	*Cornus amomum ssp. ?*	+	
S2	*Fraxinus americana*	+	
S2	*Rosa multiflora*	+	
S2	*Ulmus rubra*	+	
S2	*Vaccinium corymbosum*	+	
S2	*Viburnum dentatum var. ?*	+	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	4	
H	*Arisaema triphyllum*	2	
H	*Dryopteris cristata*	1	
H	*Impatiens capensis*	1	
H	*Maianthemum canadense*	1	
H	*Amphicarpaea bracteata*	+	
H	*Berberis thunbergii*	+	
H	*Bidens sp.*	+	
H	*Boehmeria cylindrica*	+	
H	*Carex sp.*	+	
H	*Maianthemum racemosum*	+	
H	*Mitchella repens*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Polygonatum pubescens*	+	
H	*Rubus sp.*	+	
H	*Solidago rugosa var. ?*	+	
H	*Unidentified NA*	+	
H	*Unidentified NA*	+	
H	*Unidentified NA*	+	

Surveyed By: Sydne Record 6/20/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED MAPLE SWAMP
2. GPS Point: ROB23
3. Assigned Type: RED MAPLE SWAMP
5. Site name: Robinson SP
4. Lat.: 42.08722 Lon.: -72.67316
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name: SPRINGFIELD NORTH
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In the central part of Robinson State Park., west of the park road, west of Miller Brook

11. Survey Date: 6/20/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB23 Image Annot #: Elevation: 160 Feet

17. Topographic Position:
Rolling Terrain

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Concave

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 10
Max. Length (ft): 50
Decay Class: B
Mean Diameter (in): 6
CoverClass: 1

23. Fuel Load: Low

25. Dom. Unvegetated: muck
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

31. Land Use Sign
none

32. Evidence of Disturbance Type Evidence
none

Comments:
Siol is wet, saturated, periodically inundated. Invasives: Oriental Bittersweet, vininup up a big tree.
Vegetation is homogeneous in the plot, except lower wetter spots were different from slightly higher, drier areas.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB23
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic
39. Photo Cover Type: ws1
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T2	NA	3
T3	NA	2
S1	NA	3
S2	NA	3
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T2	*Acer rubrum var. ?*	3	22.8,17.4,25.1 cm
T3	*Ulmus rubra*	2	11.5,11.5 cm
T3	*Carya glabra*	1	
	Shrub		
S1	*Lindera benzoin*	2	
S1	*Vaccinium corymbosum*	2	
S1	*Quercus rubra var. ?*	1	
S1	*Ulmus rubra*	1	
S1	*Viburnum dentatum var. lucidum*	+	
S2	*Lindera benzoin*	2	
S2	*Vaccinium corymbosum*	1	
S2	*Ulmus rubra*	+	
S2	*Viburnum dentatum var. lucidum*	+	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	4	
H	*Unidentified NA*	2	
H	*Arisaema triphyllum*	1	
H	*Dryopteris cristata*	1	
H	*Impatiens sp.*	1	
H	*Viola sp.*	1	
H	*Boehmeria cylindrica*	+	
H	*Carex stricta*	+	
H	*Grass, unidentified NA*	+	
H	*Maianthemum racemosum*	+	
H	*Osmunda cinnamomea*	+	
H	*Ranunculus recurvatus*	+	
H	*Unidentified NA (Brassicaceous)*	+	
H	*Viola cucullata*	+	

Surveyed By: Sydne Record 6/20/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED MAPLE SWAMP
2. GPS Point: ROB24
3. Assigned Type: RED MAPLE SWAMP
5. Site name: Robinson SP
4. Lat.: 42.08406 Lon.: -72.67361
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In the west central part of Robinson SP, west of Miller Brook, along the tributary shown on the topo map. It is about 0.15 miles west where the main park road crosses the aqueduct.

11. Survey Date: 6/20/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB24 Image Annot #: Elevation: 183 Feet

17. Topographic Position:
Rolling Terrain

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal:

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 10
Max. Length (ft): 20
Decay Class: B
Mean Diameter (in): 8
CoverClass: +

25. Dom. Unvegetated: Litter
26. Litter Depth: 3 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
unknown 15 ft	36.8	
Acer rubrum12 ft	26.5	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
Plot is homogeneous
across the stream there is lots of Rosa multiflora, some Japanese barberry
Beech just outside of plot

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB24
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: WS1
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	3
T2	NA	2
T3	NA	1
S1	NA	3
S2	NA	2
H	NA	4

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	3	39.1 cm
T2	*Acer rubrum var. ?*	2	24.8,30.9,45.3 cm
T3	*Acer rubrum var. ?*	1	22.0 cm
	Shrub		
S1	*Lindera benzoin*	3	
S1	*Sassafras albidum*	1	
S1	*Pinus strobus*	+	
S1	*Viburnum acerifolium*	+	
S1	*Viburnum dentatum var. ?*	+	
S2	*Fagus grandifolia*	+	
S2	*Fraxinus americana*	+	
S2	*Pinus strobus*	+	
S2	*Prunus serotina*	+	
S2	*Quercus rubra var. ?*	+	
	Herb/Graminoid		
H	*Osmunda cinnamomea*	3	
H	*Lycopodium obscurum*	2	
H	*Maianthemum canadense*	2	
H	*Dryopteris cristata*	1	
H	*Osmunda regalis var. spectabilis*	1	
H	*Carex sp.*	+	
H	*Maianthemum racemosum*	+	
H	*Symplocarpus foetidus*	+	

Surveyed By: Sydne Record 6/20/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Red Oak Sugar Maple Transition Forest (S4)

NatureServe Association Name (Optional):

Survey Date: 6/18/2007, 6/22/07 Today's Date: 1/16/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Record, Sydne and Kristina Ferrare

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-26 PCS Town Name: Agawam

Directions to site: Robinson State Park, scattered sites, Plot ROB18.

GPS Point(s) Y Yes___No___ Latitude 42.08583 Longitude -72.66975 and other areas

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): The dominant trees were Sugar Maple (Acer saccharum), Red Maple (A. rubrum) and Hemlock (Tsuga canadensis). Beech (Fagus grandifolia) and Oaks (Quercus spp.) were present in the plot. This plot was on the drier edge of the community occurrence and was picked to avoid a dense understory of Japanese Barberry (Berberis thungergii). Understory included Christmas fern (Polystichium acrostichoides), Canada Mayflower (Maianthemum canadense), and False Solomon's Seal (Maianthemum racemosum) The unvegetated soil surface was leaf litter. This community occupied relativley moist, but not wet, sides along Miller Brook, and small areas on White and May Hollow Brooks, and areas near the base of the steep slopes of deltaic deposits toward the west end of the park. Other areas had more oak and moister areas had more yellow birch (Betula alleghaniensis). Wild Sarsaparilla (Aralia nudicaulis) which is typically found in the community type was absent.

Estimated size (acres) GIS Acres (if available) **6**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): This community occurred in moist areas along permanent streams and toward the base of some of the steep deltaic deposits. Therse forests graded into wet areas. Slopes within the community areas were moderate.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): Invasive plants are the only immediate threat to this community, particularly Japanese Barberry. We recommend removing exotics in the mid to late summer.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Most of the areas have walking trails,. In a few areas the trails are too broad and are getting wider.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): This particclar sample may not be the most representative of this community as it was at the drier end of areas supporting this community. The areas shown on the map are only an estimate.

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.):
1 releve plot. Area on the map is only an estimate. This community with only slight variations in the understory was common at the east side of the park.

Owner's Name (if known): DCR, Telephone: ( )

Address:

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site):

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** – Poor **Ranked within the park**

Comments: The plot is at the edge of a sizeable area supporting the community

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Invasives present..

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: Large area in a suburban/urban setting.

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): Some invasives present. Ranks are for the Park.

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): RED OAK - SUGAR MAPLE TRANSITION FOREST
2. GPS Point: ROB18
3. Assigned Type: RED OAK - SUGAR MAPLE TRANSITION FOREST
5. Site name: Robinson SP
4. Lat.: 42.08583 Lon.: -72.66975
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: In Robinson State Park, the plot is between the park road and Miller Brook.

11. Survey Date: 6/18/2007
Previous Observations:
12. Surveyer: Sydne Record
Other surveyers: Kristina Ferrare

B. Environmental Description

14. Plot #: ROB18
Image Annot #:
Elevation: 135 Feet

17. Topographic Position:
Rolling Terrain

18. Topographic sketch

20. Slope Class: Gentle

21. Slope
Vertical: Concave
Horizontal: Convex

19. Slope aspect: 143 degrees

22. Downed
Max. Diameter (in): 27
Max. Length (ft): 26
Decay Class: B
Mean Diameter (in): 8
CoverClass: 3

25. Dom. Unvegetated: Litter
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Moist
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Medium

24. Snags

Species	DBH	#Logs
unknown, 6ft	60 cm	
Fagus	37.6	
unknown, 8 ft	34.5	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
The north end of the plot is flatter than the south end. Fairly homogeneous vegetation. Plot fairly uninvaded, but a lot of Japanese Barberry just outside of plot along Miller's Brook. Small amount of Bittersweet. Large Cary cordiformis just outside plot.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Terrestrial
35. Plot Number: ROB18
36. Plot Size: 20x20 m
37. Leaf Phenology: Semi-deciduous

38. Physiognomic Forest
39. Photo Cover Type: Hemlock Hardwood
40. Field Observed CovType: CHHeWp

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	4
T2	NA	3
T3	NA	2
S1	NA	2
S2	NA	2
H	NA	1

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	3	37.1,40.2 cm
T1	*Acer saccharum*	3	26.1,34.5 cm
T1	*Tsuga canadensis*	2	32.6,46.0,44.4 cm
T1	*Fagus grandifolia*	1	38.7 cm
T1	*Fraxinus americana*	1	28.2 cm
T1	*Quercus rubra var. ?*	1	41.3 cm
T2	*Betula lenta*	2	27.5 cm
T2	*Tsuga canadensis*	2	35.9,27.4,28.9,19.6 cm
T2	*Acer rubrum var. ?*	1	26.6 cm
T2	*Acer saccharum*	1	15.5 cm
T3	*Tsuga canadensis*	2	14.0,12.8,15.5,15.3,25.6,14.5,22.2,17.1 cm
T3	*Fagus grandifolia*	+	
	Shrub		
S1	*Fagus grandifolia*	2	
S1	*Acer saccharum*	+	
S1	*Tsuga canadensis*	+	
S2	*Fagus grandifolia*	2	
S2	*Cornus alternifolia*	+	
S2	*Viburnum acerifolium*	+	
	Herb/Graminoid		
H	*Anemone quinquefolia*	+	
H	*Arisaema triphyllum*	+	
H	*Dennstaedtia punctilobula*	+	
H	*Maianthemum canadense*	+	
H	*Mitchella repens*	+	
H	*Polygonatum pubescens*	+	
H	*Polystichum acrostichoides*	+	
H	*Trillium sp.*	+	
H	*Uvularia sp.*	+	
H	*Vaccinium pallidum*	+	

Surveyed By: Sydne Record 6/18/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
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(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Shrub Swamp (S5)
NatureServe Association Name (Optional):
Survey Date: 6/13/2007, 6/22/2007 Today's Date: 1/25/2008
Survey Site Name: Robinson State Park
Surveyor Name(s): Karen Searcy, Sydne Record, Lena Fletcher
Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS
Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-28 PCS Town Name: Agawam
Directions to site: Robinson State Park, Plots ROB7, 9, 13, 19, 20, 25, 26

GPS Point(s) Y Yes___No___ Latitude 42.640771 Longitude -72.61781 Plot ROB7
Plot 9 lat 42.09742 long -72.68041
Two sides of the same pool: Lat: 42.095748 Longitude: -72.64971
Lat 42.09543 long -72.69966

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): Vegetation was dominated by shrubs and was variable in species composition, both within and between sites. Three of the plots (9, 25, and 26) were associated with ponds with more or less permanent water. Plot 7 was in a vernally wet swale. The unvegetated surface was muck. The shrubs with the highest percent cover were Winterberry (Ilex verticillata), High bush Blueberry (Vaccinium corymbosum), Northern Arrow-wood (Viburnum dentatum var. lucidum), and Spicebush (Lindera benzoin). Herbaceous species were present but except in one plot were not a major component of the vegetation.

Estimated size (acres) GIS Acres (if available) **4**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): The shrub swamps all occurred in shallow basins that were filled with water for at least part of the year. The water source appeared to be ground water or surface seeps. The swamp at plot #9 near May Hollow Brook had sphagnum at the south end where we sampled. Plots 25 and 26 were adjacent to a beautiful pond embedded in an extensive Red Maple Swamp. The swamp with Plot 7 may have been created by human disturbance.

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): Shrub swamp 7 was probably created by human disturbance. The north end of the area near Plot 9 was adjacent to the park road and a trail. We noted very few invasives in this community. We recommend removing Glossy Buckthorn (Rhamnus frangula) from the shrub swamp sampled by plot 7.

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
Walking trails and a road adjacent to plot 9. Informal trails near the rest.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): releve plots (Form3) were filled out with species lists. See report and forms for more details..

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: [Park ranks] _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: These were patchy within the landscape, but were generally excellent examples._____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): _____

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): SHRUB SWAMP
2. GPS Point: ROB7
3. Assigned Type: SHRUB SWAMP
4. Lat.: 42.09771 Lon.: -72.64781
5. Site name: Robinson SP
6. Quad name:
7. Ecoregion: CONNECTICUT RIVER VALLEY
8. County: HAMPDEN
9. Town: AGAWAM
10. Directions: The plot is in Robinson State Park, just above the Westfield River Dam, in a flat area about 320 ft south of the end of the dam.

11. Survey Date: 6/13/2007 Previous Observations:
12. Surveyer: Karen Searcy Other surveyers: Sydne Record, Lena Fletcher

B. Environmental Description

14. Plot #: ROB7 Image Annot #: Elevation: 120 Feet

17. Topographic Position: Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope

Vertical:
Horizontal: Linear

19. Slope aspect: degrees

22. Downed

Max. Diameter (in): 4
Max. Length (ft): 18
Decay Class: A
Mean Diameter (in): 4
CoverClass: +

25. Dom. Unvegetated: Water
26. Litter Depth: 0.5 cm
27. Parent Material:

28. Moisture Regime: Saturated
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign

none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

Periodically inundated.
Invasives: Japanese barberry, purple loosestrife, honeysuckle, multiflora rose.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB7
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Shrubland
39. Photo Cover Type:
40. Field Observed CovType: NF

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	1
T2	NA	4
S1	NA	2
S2	NA	2
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Salix nigra*	1	13.1 cm
T2	*Acer rubrum var. ?*	2	
T2	*Alnus incana ssp. rugosa*	2	
T2	*Salix sp.*	2	
	Shrub		
S1	*Acer rubrum var. ?*	1	
S1	*Alnus incana ssp. rugosa*	1	
S1	*Betula populifolia*	1	
S1	*Cornus amomum ssp. ?*	1	
S1	*Rhamnus frangula*	1	
S2	*Acer rubrum var. ?*	1	
S2	*Lonicera sp.*	1	
S2	*Spiraea alba var. latifolia*	1	
S2	*Viburnum dentatum var. ?*	1	
S2	*Celastrus orbiculata*	+	
S2	*Parthenocissus quinquefolia*	+	
S2	*Vitis sp.*	+	
	Herb/Graminoid		
H	*Carex crinita*	2	
H	*Boehmeria cylindrica*	1	
H	*Carex vulpinoidea*	1	
H	*Equisetum arvense*	1	
H	*Galium sp.*	1	
H	*Glyceria striata*	1	
H	*Juncus effusus var. ?*	1	
H	*Lythrum salicaria*	1	
H	*Parthenocissus quinquefolia*	1	
H	*Polygonum sagittatum*	1	
H	*Solidago rugosa var. ?*	1	
H	*Spiraea sp.*	1	
H	*Bidens sp.*	+	
H	*Impatiens sp.*	+	
H	*Scutellaria sp.*	+	

Surveyed By: Karen Searcy 6/13/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): SHRUB SWAMP
2. GPS Point: ROB9
3. Assigned Type: SHRUB SWAMP
4. Lat.: 42.09742 Lon.: -72.68041
5. Site name: Robinson SP
6. Quad name:
7. Ecoregion: CONNECTICUT RIVER VALLEY
8. County: HAMPDEN
9. Town: AGAWAM
10. Directions: The plot is in the western part of Robinson state Park, southwest of the park road near the base of the slope in a flat area south the stream in May Hollow.

11. Survey Date: 6/13/2007 Previous Observations:
12. Surveyer: Karen Searcy Other surveyers: Sydne Record, Lena Fletcher

B. Environmental Description

14. Plot #: ROB9
Image Annot #:
Elevation: 119 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Concave

19. Slope aspect: 45 degrees

22. Downed
Max. Diameter (in): 5
Max. Length (ft): 9
Decay Class: A
Mean Diameter (in):
CoverClass:

25. Dom. Unvegetated: Water
26. Litter Depth: 1 cm
27. Parent Material:

28. Moisture Regime: Saturated
29. Soil type: Loam
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

The topography of the site includes hummocks and hollows.
Fairly broad shrub swamp with poison sumac and speckled alder and high bush blueberry. There are species of dryer places on the hummocks, such as goldenrod.
Invasive species: Oriental bittersweet outside of the plot.
Sphagnum is present, but not over hanging water. The dominant unvegetated surface in hollows is muck, on the hummocks litter dominates.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB9
36. Plot Size: 4x4 m
37. Leaf Phenology: Deciduous
38. Physiognomic Shrubland
39. Photo Cover Type:
40. Field Observed CovType: NF

41. Strata/life forms

Stratum	Height	Cover Class
S1	NA	5
S2	NA	2
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Shrub		
S1	*Acer rubrum var. ?*	4	
S1	*Ilex verticillata*	2	
S1	*Vaccinium corymbosum*	1	
S2	*Lindera benzoin*	2	
S2	*Vaccinium corymbosum*	2	
S2	*Ilex verticillata*	1	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	5	
H	*Impatiens capensis*	1	
H	*Arisaema triphyllum*	+	
H	*Athyrium filix-femina var. ?*	+	
H	*Bidens sp.*	+	
H	*Cardamine sp.*	+	
H	*Carex spp.*	+	
H	*Equisetum arvense*	+	
H	*Glyceria melicaria*	+	
H	*Huperzia lucidula*	+	
H	*Hydrocotyle americana*	+	
H	*Maianthemum canadense*	+	
H	*Osmunda cinnamomea*	+	
H	*Osmunda regalis var. spectabilis*	+	
H	*Rubus pubescens*	+	
H	*Scutellaria sp.*	+	
H	*Solanum dulcamara*	+	
H	*Solidago rugosa var. ?*	+	
H	*Stellaria sp. (spp on field form)*	+	
H	*Trientalis borealis*	+	
H	*Viola cucullata*	+	

Surveyed By: Karen Searcy 6/13/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): SHRUB SWAMP
2. GPS Point: ROB13
3. Assigned Type: SHRUB SWAMP
5. Site name: Robinson SP
4. Lat.: 42.09898 Lon.: -72.6823
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: The plot is in the western part of Robinson SP, on the steep slope west of the park road.

11. Survey Date: 6/14/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher

B. Environmental Description

14. Plot #: ROB13 Image Annot #: Elevation: 140 Feet

17. Topographic Position:
Toe of Slope

18. Topographic sketch

20. Slope Class: Gentle

21. Slope
Vertical:
Horizontal: Concave

19. Slope aspect: 25 degrees

22. Downed
Max. Diameter (in): 11
Max. Length (ft): 25
Decay Class: A
Mean Diameter (in): 9
CoverClass: 2

25. Dom. Unvegetated: Litter
26. Litter Depth: 4 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
Fraxinus	30.5	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
Northern half of plot is wetter with more muck on the unvegetated surface. Southern half of plot has more litter on unvegetated surface. Invasive species: purple loosestrife. Deer browse on Jewelweed and Loosestrife.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB13
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Shrubland
39. Photo Cover Type:
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	2
T3	NA	2
S1	NA	2
S2	NA	1
H	NA	5

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer saccharum*	2	41.5 cm
T2	*Acer saccharum*	1	19.3 cm
T2	*Ulmus rubra*	1	18.5 cm
T3	*Fraxinus americana*	2	12.5 cm
T3	*Betula alleghaniensis*	1	10.0 cm
T3	*Ulmus rubra*	1	13.7 cm
	Shrub		
S1	*Lindera benzoin*	2	
S1	*Pinus strobus*	+	
S1	*Quercus rubra var. ?*	+	
S2	*Lindera benzoin*	1	
S2	*Parthenocissus quinquefolia*	+	
S2	*Vitis sp.*	+	
	Herb/Graminoid		
H	*Symplocarpus foetidus*	5	
H	*Impatiens capensis*	3	
H	*Carex bromoides*	2	
H	*Carex gracillima*	2	
H	*Carex lurida*	2	
H	*Osmunda cinnamomea*	2	
H	*Osmunda claytoniana*	2	
H	*Viola sp.*	1	
H	*Chrysosplenium americanum*	+	
H	*Equisetum arvense*	+	
H	*Galium sp.*	+	
H	*Impatiens pallida*	+	
H	*Lythrum salicaria*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Poa palustris*	+	
H	*Ranunculus recurvatus*	+	
H	*Solidago patula*	+	

Surveyed By: Sydne Record 6/14/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): Woodland Vernal Pool
2. GPS Point: ROB19
3. Assigned Type: SHRUB SWAMP
5. Site name: Robinson SP
4. Lat.: 42.10576 Lon.: -72.68614
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: The plot is in the western part of Robinson SP, north of the parking lot at the end of the park road.. It is in the same wetland as ROB20, and 'certifiable' vernal pool 3.

11. Survey Date: 6/18/2007 Previous Observations:
12. Surveyer: Sydne Record Other surveyers: Lena Fletcher, Kristina Ferrare

B. Environmental Description

14. Plot #: ROB19 Image Annot #: Elevation: 135 Meters

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Linear

19. Slope aspect: 0 degrees

22. Downed
Max. Diameter (in): 8
Max. Length (ft): 48
Decay Class: B
Mean Diameter (in): 6
CoverClass: 1

23. Fuel Load: Low

25. Dom. Unvegetated: muck
26. Litter Depth: 2.5 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Loam
30. NRCS Soil

24. Snags

Species	DBH	#Logs
Ulmus rubra, 25	10 cm	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
75% of the plot is in the vernal pool, with muck; 25% of the plot is in shrub line, tussock sedge divides the two areas. Invasives: Celastrus orbiculata, one seedling. Swain assigned to Shrub Swamp, even though it has vernal pool characteristics and provide the habitat for animal species. It doesn't seem to be a woodland vernal pool as defined in the Classification. 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB19
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: nf
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	3
S1	NA	1
S2	NA	+
H	NA	1

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	2	47.9 cm
T2	*Acer rubrum var. ?*	3	27.8,14.0,16.9,33.1 cm
	Shrub		
S1	*Lindera benzoin*	1	
S1	*Acer rubrum var. ?*	+	
S1	*Betula lenta*	+	
S1	*Fraxinus americana*	+	
S1	*Ulmus rubra*	+	
S1	*Viburnum dentatum var. ?*	+	
S2	*Acer rubrum var. ?*	+	
S2	*Betula lenta*	+	
S2	*Fraxinus americana*	+	
S2	*Pinus strobus*	+	
S2	*Ulmus americana (species questioned)*	+	
S2	*Viburnum dentatum var. ?*	+	
	Herb/Graminoid		
H	*Carex stricta*	1	
H	*Celastrus orbiculata*	+	
H	*Lycopodium obscurum*	+	
H	*Maianthemum canadense*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Rubus sp.*	+	
H	*Solidago rugosa var. ?*	+	
H	*Thelypteris palustris var. pubescens*	+	
H	*Viburnum dentatum var. ?*	+	

Surveyed By: Sydne Record 6/18/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): Woodland Vernal Pool
2. GPS Point: ROB20
3. Assigned Type: SHRUB SWAMP
5. Site name: Robinson SP
4. Lat.: 42.10578 Lon.: -72.68652
7. Ecoregion: CONNECTICUT RIVER VALLEY
6. Quad name:
9. Town: AGAWAM
8. County: HAMPDEN
10. Directions: The plot is in the western part of Robinson SP, north of the parking lot at the end of the park road.. It is in the same wetland as ROB19 and 'certifiable' vernal pool 3.

11. Survey Date: 6/18/2007 Previous Observations:
12. Surveyer: Karen Searcy Other surveyers: Kristina Ferrare

B. Environmental Description

14. Plot #: ROB20
Image Annot #:
Elevation: 135 Feet

17. Topographic Position: Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope

Vertical: Concave
Horizontal: Concave

19. Slope aspect: 0 degrees

22. Downed

Max. Diameter (in): 8
Max. Length (ft): 2
Decay Class: B
Mean Diameter (in): 4
CoverClass: 1

25. Dom. Unvegetated: muck
26. Litter Depth: 1 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign

none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

Swain assigned to Shrub Swamp, even though it has vernal pool characteristics and provide the habitat for animal species. It doesn't seem to be a woodland vernal pool as defined in the Classification. 3/5/2008

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB20
36. Plot Size: 10x10 m
37. Leaf Phenology: Deciduous
38. Physiognomic Forest
39. Photo Cover Type: ss
40. Field Observed CovType: Hsw

41. Strata/life forms

Stratum	Height	Cover Class
T1	NA	2
T2	NA	4
T3	NA	1
S1	NA	+
S2	NA	+
H	NA	2

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Tree		
T1	*Acer rubrum var. ?*	2	31.3
T2	*Acer rubrum var. ?*	4	27.8,20.3,25.7,24,4,22.4
T3	*Fraxinus sp.*	1	
	Shrub		
S1	*Fraxinus pennsylvanica*	1	
S1	*Viburnum dentatum var. ?*	1	
S2	*Cephalanthus occidentalis*	+	
S2	*Cornus amomum ssp. ?*	+	
S2	*Spiraea alba var. latifolia*	+	
	Herb/Graminoid		
H	*Osmunda cinnamomea*	1	
H	*Arisaema triphyllum*	+	
H	*Boehmeria cylindrica*	+	
H	*Carex stricta (question mark after species)*	+	
H	*Grass, unidentified NA*	+	
H	*Onoclea sensibilis*	+	
H	*Rubus hispidus*	+	
H	*Symplocarpus foetidus*	+	
H	*Thelypteris palustris var. pubescens*	+	
H	*Toxicodendron radicans*	+	

Surveyed By: Karen Searcy 6/18/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): SHRUB SWAMP
2. GPS Point: ROB25
3. Assigned Type: SHRUB SWAMP
4. Lat.: 42.09574 Lon.: -72.64971
5. Site name: Robinson SP
6. Quad name:
7. Ecoregion: CONNECTICUT RIVER VALLEY
8. County: HAMPDEN
9. Town: AGAWAM
10. Directions: The plot is in the eastern part of Robinson SP, south of the powerline ROW in a large swamp. It is approximately 0.2mi SSW of the end of the dam. The researchers call it 'Shrub Swamp 3'.

11. Survey Date: 6/22/2007
Previous Observations:
12. Surveyer: Karen Searcy
Other surveyers: Sydne Record, Lena Fletcher

B. Environmental Description

14. Plot #: ROB25
Image Annot #:
Elevation: 125 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Linear

19. Slope aspect: degrees

22. Downed
Max. Diameter (in): 0
Max. Length (ft): 0
Decay Class:
Mean Diameter (in): 0
CoverClass:

25. Dom. Unvegetated: Bare Soil
26. Litter Depth: 1 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:

Litter is about 1 ft higher than the muck.
Invasives present: Rosa multiflora and Thuja occidentalis just outside of the plot.
Red Maple and Red Oak just outside of the plot.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB25
36. Plot Size: 4x4
37. Leaf Phenology: Deciduous
38. Physiognomic Shrubland
39. Photo Cover Type:
40. Field Observed CovType: NF

41. Strata/life forms

Stratum	Height	Cover Class
S1	NA	4
S2	NA	3
H	NA	4
V	NA	+

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Shrub		
S1	*Vaccinium corymbosum*	4	
S1	*Alnus incana ssp. rugosa*	2	
S1	*Aronia sp.*	1	
S1	*Cornus amomum ssp. ?*	+	
S2	*Vaccinium corymbosum*	3	
S2	*Aronia sp.*	1	
S2	*Viburnum dentatum var. ?*	1	
S2	*Alnus incana ssp. rugosa*	+	
S2	*Nyssa sylvatica*	+	
S2	*Spiraea sp.*	+	
	Herb/Graminoid		
H	*Osmunda cinnamomea*	3	
H	*Bidens sp.*	1	
H	*Carex stricta*	1	
H	*Aronia sp.*	+	
H	*Galium sp.*	+	
H	*Lycopodium obscurum*	+	
H	*Maianthemum canadense*	+	
H	*Onoclea sensibilis*	+	
H	*Parthenocissus quinquefolia*	+	
H	*Scutellaria sp.*	+	
H	*Symplocarpus foetidus*	+	
H	*Thelypteris palustris var. pubescens*	+	
H	*Trientalis borealis*	+	
	Vine/Liana		
V	*Apios americana*	+	

Surveyed By: Karen Searcy 6/22/2007

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

A. Identifiers (general EOR information)

1. Community type (observed): SHRUB SWAMP
2. GPS Point: ROB26
3. Assigned Type: SHRUB SWAMP
4. Lat.: 42.09543 Lon.: -72.64966
5. Site name: Robinson SP
6. Quad name:
7. Ecoregion: CONNECTICUT RIVER VALLEY
8. County: HAMPDEN
9. Town: AGAWAM
10. Directions: The plot is in the eastern part of Robinson SP, south of the powerline ROW in a large swamp. It is approximately 0.25 mi SSW of the end of the dam. It is about 100 ft due south of ROB25, in the same wetland, but at the base of the slope.
11. Survey Date: 6/22/2007 Previous Observations:
12. Surveyer: Karen Searcy Other surveyers: Sydne Record, Lena Fletcher

B. Environmental Description

14. Plot #: ROB26
Image Annot #:
Elevation: 130 Feet

17. Topographic Position:
Basin Floor

18. Topographic sketch

20. Slope Class: Flat

21. Slope
Vertical:
Horizontal: Linear

19. Slope aspect: degrees

22. Downed
Max. Diameter (in): 6
Max. Length (ft): 13
Decay Class: B
Mean Diameter (in): 4
CoverClass: 1

25. Dom. Unvegetated: muck
26. Litter Depth: 2 cm
27. Parent Material:

28. Moisture Regime: Periodically
29. Soil type: Muck
30. NRCS Soil

23. Fuel Load: Low

24. Snags

Species	DBH	#Logs
none	in	

31. Land Use Sign
none

32. Evidence of

Disturbance Type	Evidence
none	

Comments:
patchy sphagnum, not overhanging water.

Form 3: Quantitative Community Characterization

MA Natural Heritage & Endangered Species Program & MassWildlife Forestry Program Allowable Harvest

C. VEGETATION

34. System: Palustrine
35. Plot Number: ROB26
36. Plot Size: Variable Radius
37. Leaf Phenology: Deciduous
38. Physiognomic Shrubland
39. Photo Cover Type:
40. Field Observed CovType: NF

41. Strata/life forms

Stratum	Height	Cover Class
S1	NA	4
S2	NA	3
H	NA	5
N	NA	1

41. Plant species and abundance

Stratum	Taxon	Coverclass	DBH List
	Shrub		
S1	*Viburnum dentatum var. ?*	3	
S1	*Ilex verticillata*	2	
S1	*Lindera benzoin*	2	
S1	*Fraxinus americana*	1	
S2	*Lindera benzoin*	2	
S2	*Viburnum dentatum var. ?*	2	
S2	*Vaccinium corymbosum*	1	
S2	*Fraxinus americana*	+	
	Herb/Graminoid		
H	*Onoclea sensibilis*	2	
H	*Osmunda cinnamomea*	2	
H	*Symplocarpus foetidus*	2	
H	*Arisaema triphyllum*	+	
H	*Bidens sp.*	+	
H	*Boehmeria cylindrica*	+	
H	*Cardamine pensylvanica*	+	
H	*Carex intumescens*	+	
H	*Carex lurida*	+	
H	*Carex stipata*	+	
H	*Carex stricta*	+	
H	*Chelone glabra var. ?*	+	
H	*Galium trifidum var. ?*	+	
H	*Glyceria melicaria*	+	
H	*Glyceria sp.*	+	
H	*Impatiens sp.*	+	
H	*Maianthemum canadense*	+	
H	*Maianthemum racemosum*	+	
H	*Ranunculus recurvatus*	+	
H	*Solidago rugosa var. ?*	+	
H	*Thelypteris palustris var. pubescens*	+	
H	*Viola macloskeyi ssp. pallens*	+	
	Nonvascular		
N	*Mosses and Fungi NA*	1	
N	*Mosses and Fungi NA*	+	
N	*Mosses and Fungi NA*	+	

Surveyed By: Karen Searcy 6/22/2007

Natural Heritage & Endangered Species Program

Massachusetts Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
Westborough, MA 01581
(508) 792-7270 ext. 200

FORM 2: NATURAL COMMUNITY SUMMARY AND RANKING

rev. June 2006

(A location map must accompany this form.)

A. Identifiers:

Community Name (MNHESP: Swain & Kearsley, 2000): Shrub Swamp (S5) (not Woodland Vernal Pool)

NatureServe Association Name (Optional):

Survey Date: 6/18/2007 Today's Date: 1/25/2008

Survey Site Name: Robinson State Park

Surveyor Name(s): Sydne Record, Lena Fletcher, and Kristina Ferrare

Best Source (Field survey or secondary source used to complete this form, **NHESP use**): Field survey 2007, Field forms; Report F07SEA01MAUS

Transcriber (**NHESP use only**. YY-MM-DD XXX): 2008-02-28 PCS Town Name: Agawam

Directions to site: Robinson State Park,Plot ROB19.

GPS Point(s) Y Yes___No___ Latitude 42.10576 Longitude -72.68614

Other side of the same pool: Lat: 42.10578 Longitude: -72.68652

B. Community Description:

Vegetation Description (*EODATA*: **Summarize** the vegetation: dominant and/or characteristic species, indicator species, community structure, variants/microhabitat features, unvegetated surface; spatial distribution (i.e., size, number, and separation distance of patches); intact natural processes, geology, hydrology, topography, and soil properties, especially if relevant to the community identification): Shrubby vegetation surrounding a vernal pool. The wettest area in the center had an occasional Red Maple (Acer rubrum). Soil toward the center of the swale was recently exposed muck, the soil surface at the extreme edge under the sparse shrubs was covered by leaf litter. The tree canopy was Red Maple, and the sparse shrub layer at the margin of the vernal pool was dominated by Northern Arrow-wood (Viburnum dentatum var. lucidum). Spicebush (Lindera benzoin) and Buttonbush (Cephalanthus occidentalis) were present. One of the characteristic species of the herbaceous layer was marsh fern (Thelypteris palustris).

Estimated size (acres) GIS Acres (if available) **1**

Physical Description (*GENDESC*: Describe the landscape surrounding the community, including the natural area. Both within and surrounding the community, describe: physical structures and land use practices; natural disturbances; embedded, adjacent, and nearby natural communities including aquatic features; notable landforms; scenic qualities): The vernal pool was in a long, narrow, wet swale on an old terrace well above the river. The swale had water from at least mid-April until mid-June. The surrounding forest was dominated by Red Maple and was disturbed..

Is community on conservation land (if known): Yes Managed Area Name: Robinson State Park

Evidence of Disturbance/Threats to the Community/Management Recommendations (*MGMTCOM*: Describe the anthropogenic disturbances that have decreased the quality and viability of the community such as hydrologic alterations (ditching, damming, erosion etc.), logging, mining, livestock grazing, plantations, orchards, structures, trampling, and exotic flora or fauna within and surrounding the community. Discuss threats to the site and management implications.): The vernal pool and its margins appeared to be undisturbed. However, it was embedden in a disturbed moist forest dominated by red maple..

Recreational Use (evidence of ATV's, ORV's, mountain bikes, horses, walking trails, etc.):
None seen.

Protection Comments (*PROTCOM*: Comment on the legal protectability of the site): _____

General Comments (*COMMENTS*: Note the type of sampling done; observation point (form 1), releve plot (form 3), plant list, etc.; note any additional field work needed. Comment on questionable identification.): Two releve plots (Form3) were filled out with species lists. We did not check to see if this was a vernal pool that supported amphibians or other animal species.

Owner's Name (if known): DCR, _____ Telephone: (__)_____

Address: _____

Is Owner: aware of community? __yes _ no __unknown; Protecting community? __yes __no __unknown

Owner Comments (*OWNERCOM*: e.g., contact owner prior to visiting the site): _____

C: Community Element Occurrence Ranking: (Refer to community ranking specifications for assistance.)

Community Size Rank: (Compare relative size to other known occurrences, configuration, patchiness)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: This seemed to be an excellent example of a vernal pool, at least as far as topography, water and vegetation. We did not check for amphibians.. _____

Community Condition Rank: (Consider development/maturity (e.g., old growth), abiotic condition, species and physiognomic diversity, ecological processes, abundance of exotic species, internal connectivity, degree of anthropogenic disturbance including fragmentation).

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: __. _____

Community Landscape Context Rank: (Consider the size and connectivity of the natural landscape, the position of the community within the landscape, and the landscape condition)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments: _____

Community EO Rank: (What are the long-term prospects for continued existence of this occurrence at the indicated level of quality? A summary of all factors listed above. Explain the basis of your ranking: range wide, state wide, or locally.)

A – Excellent **B** – Good **C** – Marginal **D** - Poor

Comments (*EORANKCOM:* Summarize the above and justify the EO Rank assigned): _____

Other rare species and/or natural communities observed at this site (**NHESP use**) T/U = Transcribed/Updated?):

	SPECIES OR COMMUNITY	T/U?		SPECIES OR COMMUNITY	T/U?
1			4		
2			5		
3			6		